Vol. 1. May, 1906. No. 2.

Bulletin

of the

Stout Training Schools

Announcements
of the Training Schools for the Year 1906-1907

Domestic Science and Art in the Public Schools

Courses of Study
in Manual Training, Domestic Science and Drawing in the Menomonie Public Schools

Published Quarterly

by the

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Menomonie, Wisconsin

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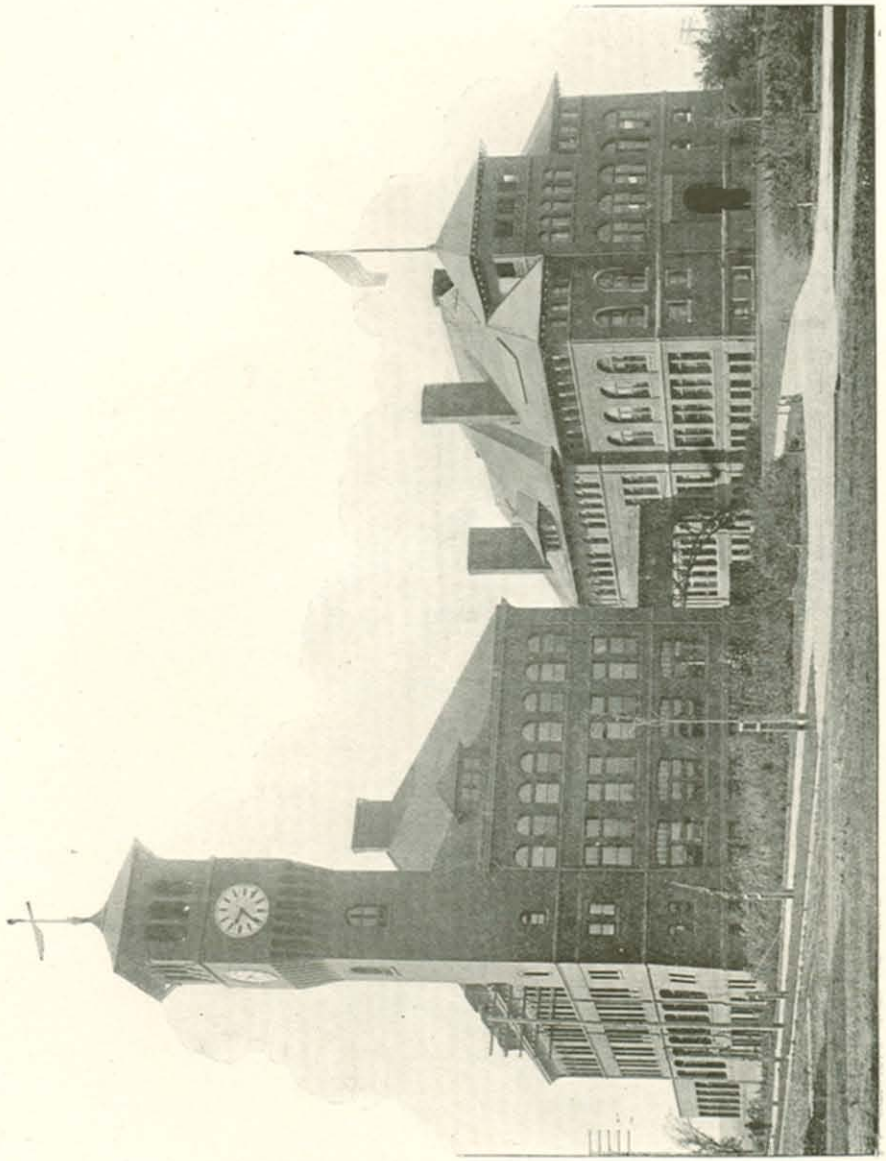

Stout Manual Training School.

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Stout Training Schools,

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STOUT TRAINING SCHOOLS.

OFFICERS OF

Administration and Instruction

SCHOOL YEAR 1906-7

Board of Education.

HON. J. H. STOUT, PRESIDENT,

N. O. VARNUM, OTTO G. ANDERSON,

ALFRED PILLSBURY.

Superintendent

L. D. HARVEY.

Faculty.

L. D. Harvey, Superintendent of Schools, Psychology and Pedagogy, and General Superintendent of Professional Work. Elementary Education.

Milton College, 1872; High School Principal, 1873-1879; City Superintendent, 1880-1885; Normal Schools, 1885-1898; State Superintendent, 1889-1902; Stout Training Schools, 1903—

George Fred Buxton, Director of Training School for Manual Training Teachers; Manual Training Design, Mechanical Drawing, Organization and Management.

Pratt Institute, art and manual training, 1899; Teachers' College, Columbia University 1904. Teacher of manual trajning, Newark, New Jersey, High School, 1899-1901; Walker Manual Training School, Portland, Me., 1901-1903; Mechanical Drawing and Mathematics, Springfield, Massachusetts, High School, 1904-1905; Stout Training Schools,1905—

Howard D. Brundage, Elementary Construction Work; Supervisor of Elementary Manual Training.

Teachers' College, Columbia University, 1900; Teacher of bench work in wood Stamford, Connecticut, Public Schools, 1900-1902; Teacher of bench work in wood, and Supervisor of bent-iron work in Hartford, Connecticut, Public Schools, 1902-1905; instructor in hammered metal and enameled work in Arts and Crafts Society, Hartford, Connecticut 1902-1905; Stout Training Schools, 1905—

Leo Ammann, Advanced Woodwork; Forging; Machine Shop Practice.

St. Louis Manual Training School, 1893, Cornell University, Mechanical Engineering course, 1897; one year post-graduate work Federal Polytechnikum, Zurich, Switzerland, 1898. Teacher in St. Louis Manual Training School, 1901-1905; Stout Training Schools, 1905—

Louis F. Olson, Assistant in Mechanical Drawing and Woodwork.

Stout Training School for Manual Training Teachers, 1904-1906. Graduate Student, 1906—

_____ _____Assistant in Iron Work.

Miss Laura G. Day, Director of Training School for Domestic Science Teachers; Food Materials and Food, Household Economy and Management.

Kansas State Agricultural College, 1893; post-graduate work domestic science, 1893-1894. Assistant in domestic science and arts department, Kansas State Agricultural College, 1894-1895; teacher of domestic science and arts, Stout Manual Training School, Menomonie, Wis., 1895-1900; special lecturer and director of department of domestic economy, Purdue University, La Fayette, Ind., 1901-1902; Stout Training Schools, 1903—

Miss Nellie W. Farnsworth, Physiology, Foodwork, and Assistant in Domestic Economy.

River Falls Normal School, 1892. Supervisor of Music 1893-1902. Teacher, Duluth State Normal School, 1903-4. Student Stout Training School, 1904-5; teacher Valley City State Normal School, 1905-6; Stout Training School of Domestic Science 1906—.

Miss Mary A. Dunning, Domestic Art.

Pratt Institute, 1902; Teachers' College, 1903-1904. Teacher Hackley Manual Training School, Muskegon, Mich., 1904-1905; Stout Training School for Domestic Science Teachers, 1905—.

Miss Anna K. Flint, Domestic Art.

University of Wisconsin, 1895; assistant, Durand High School, 1895-1897; special work domestic science, Stout Manual Training School, 1898-1900. Teacher of sewing and assistant in domestic science department, Stout Manual Training School, 1900; Student Teachers' College 1905-1906; Stout Training Schools 1903-1905, 1903—

A. H. Christman, Chemistry, Bacteriology and Physiology.

Northern Indiana Normal School and Business College, 1893-95. Teacher in District and Graded Schools, 1895-1900. University of Wisconsin, 1903. Assistant instructor in biology, University of Wisconsin, 1903-04; Stout Training Schools, 1904-1906.

Miss Alma Binzel, Director of Kindergarten Training School; Kindergarten Principles, Theory and Practice; History of Education; Supervision of Practice Teaching in the Kindergarten.

Kindergarten Training Department, Milwaukee State Normal School, 1894. Director of Model Kindergarten and Assistant in Kindergarten Training Department, Milwaukee State Normal School, 1895-1903. Student Teachers' College, 1903-1906. Stout Kindergarten Training School, 1906—

Mary D. Bradford, Supervisor of Primary Work; Theory and Practice in Primary Teaching; Inspection and Supervision.

Teacher Kenosha High School, 1884-94; Supervisor of Practice Teaching and Director of Model School, Stevens Point Normal School, 1894-1906; Stout Training Schools, 1906—

Miss Cora Barron, Critic Teacher and Director of the Codington Kindergarten; Gifts, Stories, Games and Occupations.

Stout Kindergarten and Primary Training School, Menomonie, Wis., 1903; Indiana Kindergarten and Primary Normal Training School (Normal course), Indianapolis, 1904. Director of Yandes St. Kindergarten, Indianapolis, 1904; director of Codington Kindergarten, Menomonie, Wis., 1904—

Miss Mary Ehrhard, Critic Teacher and Director North Menomonie Kindergarten; Clay Modeling and Manual Work.

Menomonie Kindergarten Training School, 1900. Director North Menomonie Kindergarten, 1903—

S. H. Metcalf, Director of Music in Public Schools; Theory of Music, Note Reading, Kindergarten Songs, and Chorus Work.

Miss Margaret Ashmun, English Composition.

Stevens Point Normal, 1897. Assistant Marshfield High School, 1898-1903. University of Chicago, summer sessions, 1901-1902; University of Wisconsin, 1904. Stout Training Schools, 1904—

Miss Kate Murphy, Director of Art Department of Stout Manual Training School; Design and Illustration; House Decoration and Furnishing.

St. Louis School of Fine Arts, 1887-9. Director, art department Elmwood Normal School, Farmington, Mo., 1888-9; New York School of Technical Design, 1889-90; New York Studios, 1890-2. Teacher of drawing in public schools of Chicago, 1893-4; director of art department of Manual Training School, and supervisor of drawing in the Menomonie Public Schools, 1894—

Miss Louise Christiansen, Assistant in Art Department Stout Manual Training School; Drawing and Color Work.

Stout Training School for Domestic Science Teachers, 1905.

G. A. Works, Nature Study.

River Falls Normal School, 1898. Assistant in High School, Menomonie, Wis., 1898-9; Principal, High School, St. Croix Falls, Wis., 1899-1902. University of Wisconsin, 1902-04; Principal High School Burlington, Wis., 1904-5; Principal High School, Menomonie, Wis., 1905—

N. J. MacArthur, Director of School of Physical Training; Theory and Practice of Physical Training.

Collegiate Institute at Collingwood, Ont., 1885-6; Model School, Durham, Ont., 1886-7. Taught school, 1887-8-9, Collegiate Institute at Owen Sound, 1890-1; University of Toronto, 1891-5, B. A. Principal of High School, Albert Lea, Minn., 1895-6; superintendent of schools, Le Sueur, Minn., 1896-7; Harvard School of Physical Training, Summers 1896 and 1899. Director of physical training and instructor in athletics St. Cloud (Minn.) State Normal School, 1897-1901; director School of Physical Training, Menomonie, 1902—

Miss Agatha Carstens, Assistant School of Physical Training.

Normal School of A. A. G. U. of Milwaukee, Wis., 1905. Stout School of Physical Training, 1906—

The Stout Training Schools

These schools are organized to provide facilities for the thorough preparation of teachers and supervisors in the fields of manual training, domestic art and science, kindergarten and primary work.

The work which each school undertakes to do in its field is three-fold—academic, technical, and professional. The academic, involves the mastery of the subject matter of the courses, as a matter of knowledge. The technical, involves a mastery of the handwork regarded as valuable for training purposes, as a matter of skill. The professional, involves a study of educational principles and processes, and practice in applying them in the organization and administration of work in its particular field of educational effort, and a study of the relation of its special work to other phases of the public school curriculum.

While each of these three phases has a content of its own and receives special treatment, the professional phase permeates the entire work in the other two. It appears in the academic work when students are led to observe and consider their own mental processes; to determine the use to be made of the subject matter in their subsequent work as teachers, and how they are to use it most effectively. It appears in the technical work as it proceeds when they are led to observe the order of development; to determine whether the particular order followed is essential or not; to note the character and relation of mental and motor activities employed in the different kinds of work; and to consider how, as teachers, they should conduct such work so as to secure the mental and motor activities appropriate and necessary for the proper development of the pupils they are likely to teach.

From beginning to end students are impressed with the idea that they must not only have accurate knowledge of the subjects they are to teach, and skill in the different phases of handwork, but that they must know how to teach others the things they are learning, and to train others to do well the things they are trained in doing.

While the student taking these courses will have the benefit of a far better equipment than can be provided in most systems of schools, they are trained with reference to the development of power and skill in organizing and carrying on work under such conditions as to equipment, as can be supplied easily in a village or city school system.

FACILITIES FOR WORK.

The Stout Manual Training School building is thoroughly equipped for all phases of manual training work from the simplest work of the kindergarten to the most advanced work in the machine shop. Benches, tools, and machines are the best that money can buy, and adequate in quantity. The equipment for sewing, cooking, and laboratory work in the domestic art and science department is of the same high grade as in the manual training department.

Rooms with proper equipment are set apart for the training classes in the kindergarten and primary courses, and three public kindergartens and the primary schools of the city are used as schools of observation and practice.

The Art Department is complete in its appointments and furnishes a most excellent illustration of the relation of art to the other phases of public school work.

The Stout Gymnasium and Natatorium, erected and equipped at an expense of $75,000 furnishes unsurpassed facilities for physical training, not only for the students in the public schools, but for the training class students as well.

Menomonie was the first city in the west to incorporate complete courses of manual training, and domestic art and science in all the grades of the public schools. Such courses have been in operation for many years and furnish unequalled opportunities for training school students to observe the teaching in these special lines, and to do practice teaching, taking entire charge of regular public school classes.

Where these special lines have been so thoroughly developed as they are in Menomonie, they furnish a most excellent opportunity for students who are interested in a plan of organization and development of manual training, and domestic art and science in connection with a public school system. This is especially valuable for those who are looking toward supervisory work.

The libraries provided for the Training School students while not large in point of number of volumes, have been selected with the greatest care, and are supplemented by an excellent collection of special books in the Mabel Tainter Memorial Library—the public library of the city—all of which are available for the use of students.

The teaching force comprising the faculties of the three schools has been selected with reference to the ability of each individual to do efficient work in the training of teachers. The aim has been to select members of the faculty who are strong not only on academic and technical lines, but who understand and appreciate the importance of the professional side.

The work of the Menomonie Schools is known throughout all sections of the country. The Stout Training Schools are the outgrowth of the idea underlying the work in the Menomonie Schools.

The results of the application of that idea through fifteen years of work have justified it in the minds of those competent to judge. The Training Schools thus have back of them a body of accomplished results in the public schools, and the training which they give keeps in mind what has been accomplished in Menomonie, and therefore what can be accomplished elsewhere, and at the same time recognizes that very much yet remains to be done and very many experiments are yet to be tried in order to develop the highest possibilities in industrial education.

Through the munificence of Mr. Stout, means have been provided for carrying on various lines of experimental work in industrial education in a city system of schools. These lines of work will be continued, new experiments will be tried and the results of these experiments will be available for training school students. Theories will be tested before they are accepted as established bodies of educational doctrine to be given to training school students. The aim of the schools is to fit teachers to do well what has already been proved to be worth doing, and at the same time to develop open mindedness and breadth of view which will lead them to consider, weigh carefully, test, and finally use what is valuable in the new.

LENGTH OF COURSES.

The courses leading to the diploma granted by each school cover two years' work. Beginning with the school year of 1906-1907, graduate courses carrying one year's work will be offered in each of the three schools. These courses are planned to meet the needs of teachers who wish to take more advanced work, both technical and professional, than is offered in the regular courses. They furnish excellent opportunities for those who desire to prepare themselves to teach these special subjects in professional schools, or for supervisory work in city systems of schools.

GENERAL INFORMATION.

Qualifications for Admission to the Training Schools.

Graduation from a four years' high school course, or equivalent preparation, will be required for admission to each of the Training Courses. The candidate must be at least seventeen years of age, and must be possessed of good health and physical energy, of natural fitness for the work, of refinement and good character. For admission to the Kindergarten Training Course some proficiency in music is desired, although students are not denied admission because of lack of such knowledge. Testimonials of good character are required.

Tuition.

The tuition fee is one hundred dollars per year, one-half payable at the beginning of each semester. A small fee will be charged to cover the cost of materials used by students in each department.

Credits.

Students who have had Normal School or Collegiate training will be given credit for such work in the courses they pursue as they have satisfactorily mastered.

Students who have had successful experience in teaching may be relieved of a portion of the practice teaching required of those who have not taught.

Time of Entrance.

Students should arrange to enter at the beginning of the school year if possible. When this is not feasible students may enter at the beginning of the second semester.

Cost of Living.

Board and room can be obtained at prices ranging from four and a half to five dollars per week.

Non-Professional Courses.

Properly qualified students who do not wish to prepare themselves as teachers, but who desire to take work in the Domestic Science and Art courses for its practical and cultural value, will be admitted and will not be required to take the prescribed professional work.

Inducements for Teachers to Prepare Themselves for Work in Manual Training and Domestic Science.

The present demand for competent teachers of these subjects in the elementary schools, is larger than the supply. In almost every other department of teaching, the supply exceeds the demand.

In many localities, teachers are sought who can teach some of the common branches during a portion of the day and carry on work either in manual training or in domestic science for the remaining part of the day. Better salaries are paid this class of teachers than are paid those who can do work in the common branches only. Manual training or domestic science once introduced in a system of schools, even in a small way, expands until the full time of a teacher or of several teachers is demanded for its successful administration.

In other localities, manual training and domestic science are being introduced in connection with the high school work. Great difficulty is experienced in securing competent teachers. Good salaries are paid teachers who are properly prepared for carrying on the work in the high schools.

For the manual training work in the grades below the high school, and especially in the lower grades, women are as successful as men when they have received the proper training. The fact that the two training schools are carried on in the same building, and under the same management, makes it possible for teachers to prepare themselves both for teaching domestic science and for the elementary work in manual training.

Demand for Trained Kindergartners.

Since the organization of the Kindergarten Training School in 1899, its graduates have been in demand. In nearly every case positions have been secured for the next year, before graduation.

The Standing of the Training Schools.

That the Stout Training Schools are well thought of by school officials is shown by the fact that graduates from these schools are now holding good positions in fifteen different states, and that the calls for manual training teachers are three times the number that can be supplied.

Aid in Securing Positions.

Every aid which can properly be given by the officers of the school will be extended to graduates in securing positions.

The Stout Manual Training School at the St. Louis Exposition.

At the St. Louis Exposition the Stout Manual Training School made an exhibit of pupils' work in Manual Training, Domestic Art, and Drawing.

This exhibit was awarded the Grand Prize by the Jury of Awards in the Elementary Group of the Department of Education.

The significance of this award is shown by the fact that among all the exhibits from the different states of the union and from foreign countries, no other school making a similar exhibit in the Elementary Group was awarded the Grand Prize.

The opportunities afforded training school students for observation of methods of teaching, for practice teaching, and for a study of the organization and administration of these lines of work in a public school thus recognized by a discriminating jury cannot be overestimated.

Further Information.

Address all correspondence regarding courses of study or general work of the Training Schools to

L. D. HARVEY,
Supt. Stout Training Schools,
Menomonie, Wisconsin.

Outlines of Training School Courses

The following is a general outline of the training courses offered for the preparation of manual training, domestic science, and kindergarten teachers.

MODIFICATION OF COURSES.

The outlines of the courses here given are subject to such modification as experience may show to be desirable, without reducing the total time required.

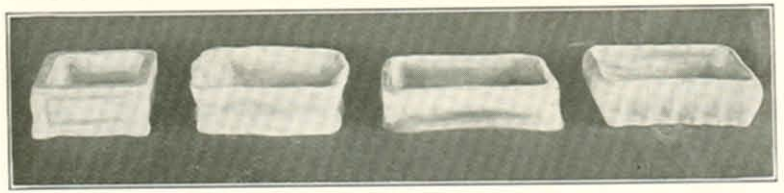
MANUAL TRAINING COURSES.

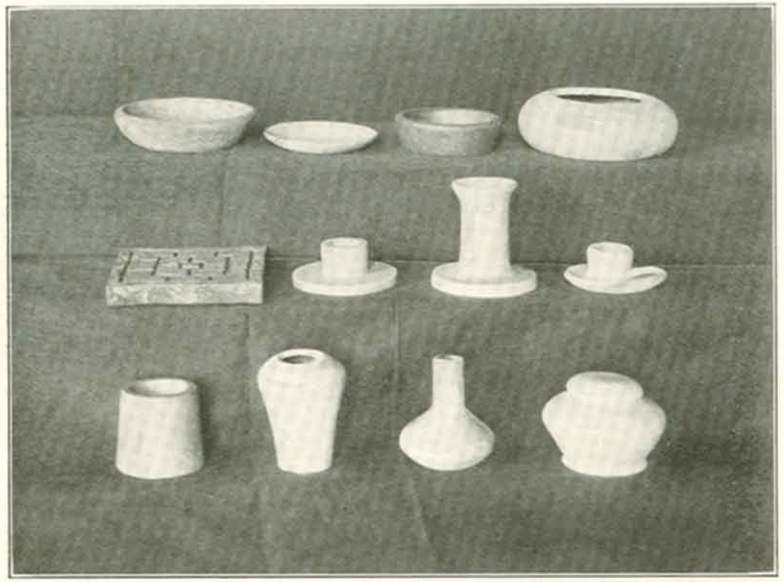
ELEMENTARY SCHOOL COURSES.

HANDWORK FOR PRIMARY GRADES.

Paper and Cardboard. Paper cutting for illustration work and as a study of form and design leads to the use of paper and cardboard as materials of construction. Small booklets of different sizes and shapes are made from various papers, the covers decorated, and drawings, notes, clippings, illustrations, and other school matter mounted within. This leads to simple book-binding. The cardboard box and filing case as adapted to the first four grades are made in several styles. Simple pieces, such as photo mounts, postal scales, envelopes, and paper sacks, labels, and bookmarks are made from single pieces of paper, tag board, and bristol board.

Clay Modeling. After the use of clay in representing forms of solid structure, in modeling from objects, and in the study of relief ornament, the time is given to building up small pieces of pottery. Different methods of handling the clay are practiced in the making of four bowl or saucer forms. The use of incised design is illustrated in the decoration of a tile. Three types of candle sticks lead to the making of three types of vases and a jar with cover.



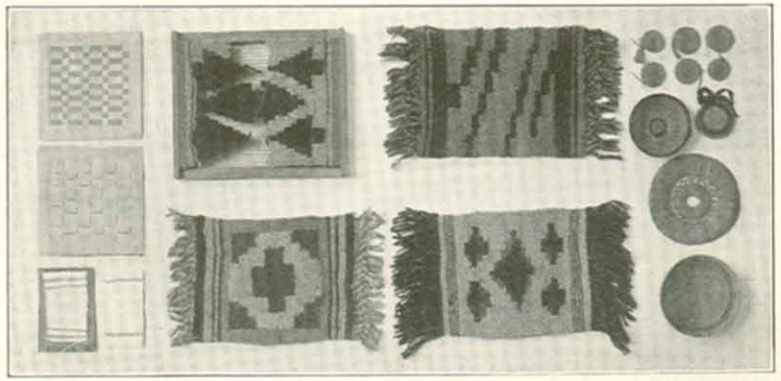


Elementary Hand Built Pottery.

Weaving and Basketry. Through the use of paper strips, yarns, raffia, grasses, rope and rattan, the processes of interlacing materials to form various textile patterns and basket forms are illustrated.

The weaving models include paper mat weaving as a study of the building of designs through different interlaces, weaving of a small cotton towel on a cardboard loom, a woolen rug on a simple wooden loom, and a larger rug upon a more complex loom.

In basketry, several raffia, rope, and rattan coil stitches are worked out and applied in the making of small baskets. The rattan and splint baskets are made from individual choice of shapes.



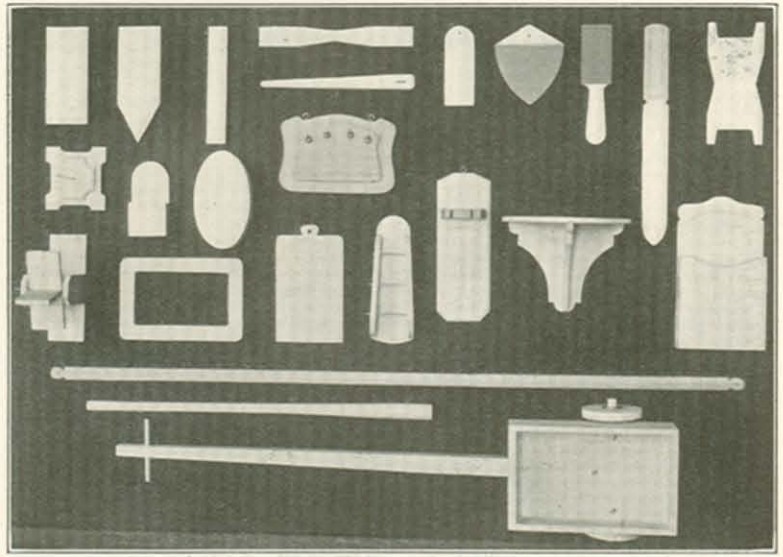
Primary Work in Weaving and Basketry.

Thin Wood Construction. Problems in selecting, assembling, and fastening with glue and brads strips of thin wood to form pieces of furniture, boxes, and bird houses are given, with methods of class presentation and ways of preparing materials for class work. Some combinations of cardboard and wood are also considered.

HANDWORK FOR INTERMEDIATE AND GRAMMAR GRADES.

Woodwork. Exercises involving the use of simple hand tools are presented in such a way as to prepare the student for teaching wood processes in elementary schools. The principles and practice of knife and bench sloyd, the possibilities of the art crafts, the suggestion of engineering and industrial problems, and the correlation with physics, mathematics, and art are all made bases for the course in wood.

The work designed for the fourth and fifth grades is planned for block plane and knife where bench facilities can be provided and for the knife alone where the work must be done at the regular class room desks.

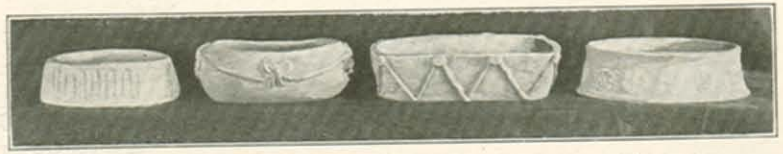


Woodwork, Fourth and Fifth Grades.

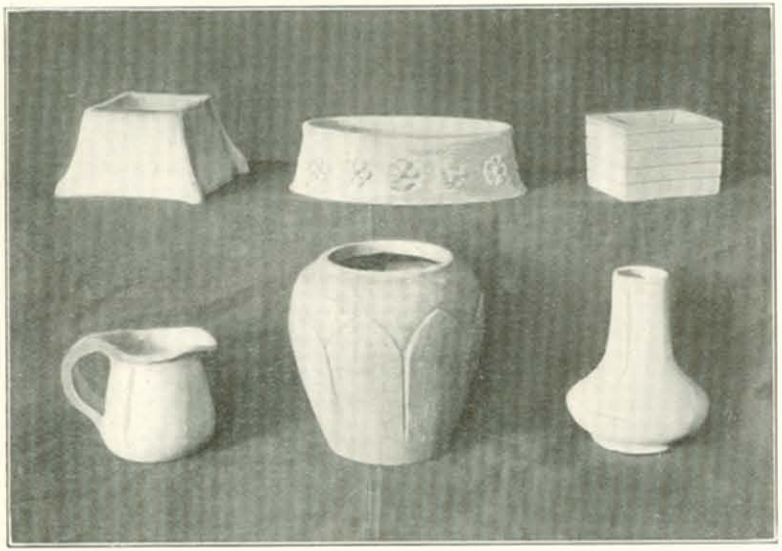
The work designed for sixth, seventh, and eighth grades is planned for the room with special equipment of benches and tools. It involves the use of the saw, the squaring up of stock with the plane, the various cuts with the chisel gauge and spoke shave, the use of the brace and bit, different joints and ways of fitting and fastening, methods of finishing and polishing. A regular sequence is planned for about five-sixths of the course and opportunities are given for the making of projects to be designed by the student.

Some Woodwork Problems for Grammar Grades.

Pottery and Cement. The elementary pottery for primary grades is continued into more advanced work in the making of decorated fern boxes, soap and match dishes, pitchers, sugar bowls or tea pots, large jars and vases. The preparation of clay for class use, the moulding and decorating of pottery, the placing and firing of the kiln, and the use of glazes form the principal part of the work. Wheel work and casting in plaster are explained and opportunity furnished for individual practice.

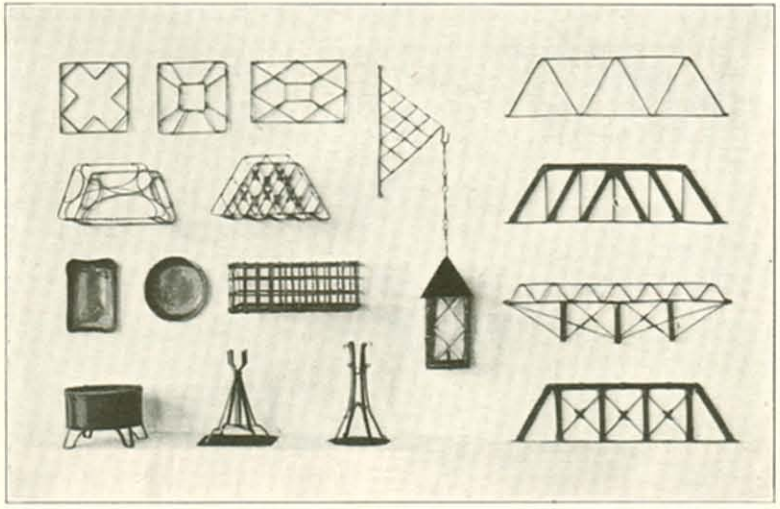


The work in cement includes a study of the properties of the different compositions, and the making of arches, bridges, piers, walls, and tiles on a small scale.



Pottery for Upper Grades.

Bent Iron and Sheet Metal. A knowledge of the properties of metals as differing from other structural materials may be obtained in the grammar grades through the manipulation of thin iron. The principles of constructive and of decorative design are considered in each model. The regular models are the grille exercise or mat,



Bent Iron and Sheet Metal.

mail receiver, hammered tray, fern dish, candle stick, lantern, bracket, chain, Warren bridge truss and Pratt truss, and other types of structure. Original designs are required for the decorative problems. Supplementary free work is also required.

DRAWING AND DESIGN.

Freehand Drawing. Practice is given in drawing from flowers, from pose, from parts of machines, and from photographs and drawings, to develop an ability to use the pencil and chalk readily in representing mechanical constructions and decorative elements.

Mechanical Drawing. A course of drawings for upper grammar grades and for the first year in the high school is presented in such a way as to show (1) the development of the idea of projection and the working drawing, (2) elementary geometrical constructions, involutes, and developments, (3) the use of diagrams, (4) proportion in architecture, (5) elements of machines. The work for the grammar grades is done in pencil and wash; that for the first year high school, in pen and ink.

Manual Training Design. Part I. (a) The rectangle as an area is studied. It is divided by vertical bands, and variations are then made as to width of bands, distance between them, number of bands, and arrangement of light and dark areas. Other rectangles are divided by crossing bands and variations made as in the first exercise. Others are divided by border bands, and still others by small inner rectangles. After each series of sketches a selection is made and used as a basis for lines of emphasis in a finished drawing of a box, cabinet, or other manual training model. (b.) The possibilities of slanting bands, triangular and rhomboid forms are next worked out in the same manner as that of the rectangular forms. (c.) A more abstract study of the principles of design as applied to the rectangle is made and worked out with several examples. This is followed by (d) a study of different kinds of lines, applications being made to free non-rectangular forms and also used as decorative ornament. (e.) Units of ornament are studied as used by different peoples and for various purposes. The limit of adaptibility of types of design to types of construction is constantly pointed out. Throughout the course the use of design to enhance structural features rather than to hide them is kept clearly in mind.

Part II. Typical problems in paper and cardboard, weaving basketry and leather, wood, ceramics and metals are worked out in pencil, pen and ink, and wash.

Part III. Full sequences of models for courses of study in the different materials are planned for assigned grades.

PROFESSIONAL WORK.

Psychology and Pedagogy. The work in psychology and pedagogy is taken at the beginning of the Junior year and is limited to a consideration of principles, fundamental in character, and to the ap-

plication of these principles in the actual work of teaching. Time will not permit the study of psychology as a culture subject. The students who have so studied it but have not given consideration to the application of its fundamental principles in teaching, will need to take the prescribed course.

Special attention is given to the psychology of attention, habit, and will.

Those principles of pedagogy are considered which may be shown to have a practical application in the teacher's work. In the academic, shop, and laboratory work, it is the aim of the teacher not only to have students master the special work under consideration, both from the academic and the technical standpoints, but at the same time to consider the work from the standpoint of the teacher. Practical exercises are given throughout the course, requiring a conscious application by students in their work of the psychological and pedagogical principles studied.

Observation of Teaching and Practice Teaching. In the Senior year the students are required to systematically observe the work of experienced teachers in conducting classes in their respective lines of work in the public schools. The observation work is under the direction of members of the training school faculty. The observation required is not simply a "looking on;" the teachers in charge direct the attention of the observers to definite aims, methods, and results. Methods of different teachers in the instruction and control of classes are studied, not to be copied, but to determine how far they are based on sound pedagogic principles. The work under observation is discussed by those observing and the teachers in charge of the observation classes. Weaknesses are pointed out and the reasons for the weakness shown from a pedagogic standpoint. The strong work is noted and the reasons for its strength discussed. The aim is to make students familiar with the application of psychological and pedagogical principles through a careful observation of the various ways in which these principles are applied by different teachers in different phases of the work. After the observation work has been continued for a reasonable time, students are put in charge of classes and are given practice in teaching in different grades. Before beginning practice teaching in any grade, students are required to thoroughly familiarize themselves with the work outlined in the course of study for that and lower grades and by observation of the class, to determine what progress has been made in the course and what are the next steps in order. Before taking charge of the classes, they are required to prepare definite plans indicating the proper order of procedure. The practice teaching is done under the supervision of the special teacher of the particular line of work in which the instruction is given. In the class work of the regular teachers in the training schools, an effort is made to bring into the consciousness of the students the pedagogical principles upon which the work there is based.

Organization and Management of Manual Training Classes in Public Schools. By means of lectures, discussions, essays, and written reports, the aims and practices concerned in carrying forward a complete course in manual training for a city system of schools is studied. The following topics are considered:

The stated aims of manual training.

The relation of manual training exercises to mental development.

Manual training as a culture subject.

The value of manual training as a preparation for earning a livelihood.

The relation of manual training practice to general educational practice and possibilities of correlating the two.

The planning of a manual training course of study.

Manual training equipment and supplies.

Individual and class instruction.

Proper control of classes in manual work.

The work of the manual training specialist as an organizer, as a class teacher, and as a supervisor.

History and Literature of Manual Training. By means of lectures, assigned readings, and reviews, the following topics are considered:

Historical educational theory as related to handwork in the schools.

Present tendencies in the development of manual training.

The history of the Swedish sloyd movement.

The influence of the Russian system of tool instruction upon American manual training practice.

The influence of the art crafts movement upon manual training.

Manual training courses of study in the United States compared.

Manual training in foreign countries.

Recent contributions to the literature of manual training.

ENGLISH.

The aim of this course is to present such phases of composition work as will give the student a command, both in speaking and writing, of simple, correct and clean-cut English. The special topics considered vary with the needs of particular classes, but in general they may be designated as: grammatical forms; sentence structure; choice of words; social and business correspondence; the preparation and organization of literary material.

The work is closely correlated with that in other departments and is based on long and short themes, talks, discussions, and papers presented by members of the classes.

A special feature of the work in English is the training in oral exposition and description. The tools and materials used, processes employed, and products completed in the construction work furnish

many of the topics for these exercises. This work is continued throughout the course for the purpose of developing ease, facility, and accuracy in the students' subsequent use of English as a teacher in the class-room.

PHYSICAL TRAINING.

Regular work in the gymnasium will be taken throughout the course unless students are excused by the director for cause.

ELECTIVES.

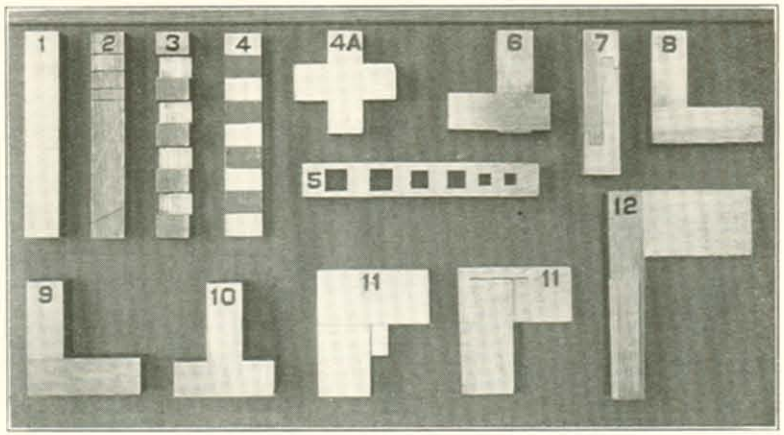
Electives in literature, work selected in the secondary school course or in the domestic art and science courses or in drawing, will be taken the equivalent of one hour daily throughout the course. In the selection of electives, students will be expected to advise with and secure the approval of the director of the training school.

SECONDARY SCHOOL COURSES.

WOODWORKING FOR SECONDARY SCHOOLS.

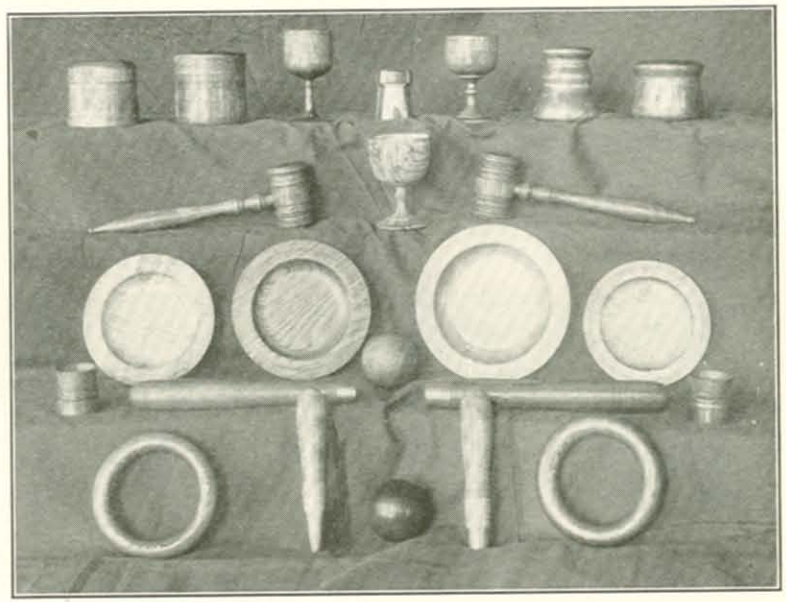
Joinery. The course in joinery consists in making a series of accurate cabinet making joints and applying them in the construction of pieces of furniture, experimental apparatus, the dove-tail box, and special types of structure.

This work is given in the senior year, and can only be taken by those who have had the course in woodwork for grammar grades. At least four applications of the exercise pieces must be made by every student. The proper use and care of a full set of woodworking tools form the basis of the course.



Exercises in Joinery.

Wood Turning. The course in wood turning consists in making a series of exercise pieces which give a familarity with wood turning tools and lathe operations, followed by a series of finished pieces in hard wood which bring in centre turning and face plate work, fitting, chucking and polishing.



Applications of Wood Turning Exercises.

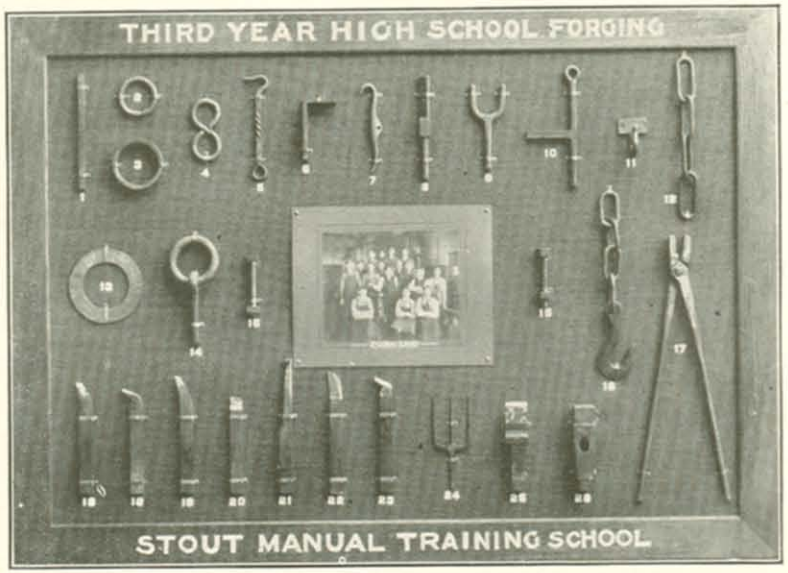
Pattern Making. The work in pattern making aims to give an acquaintance with pattern making processes and considerations necessary to successful molding. An exercise pattern is made to show the more important principles involved, and then split patterns and cored patterns of various types are introduced so as to involve bench work with chisel and plane, lathe work, and cutting to an irregular template. Core boxes for some of the patterns are made and built up work is introduced.

Wood Carving. Exercises in wood carving are first presented, which form a sequence of practice pieces in soft wood. These practice pieces are planned so as to develop a facility in handling the carving tools, and give an acquaintance with the different cuts involved in grooving, sinking the background, modeling concave and convex surfaces. These exercises begin with straight and are followed with curved line designs for units of ornament upon a square piece of board. The carving of small panels in hard wood, which follows the exercises, is applied as a decoration to cabinet constructions made by the student. Different kinds of treatment adapted to geometrical designs, conventionalized natural forms, and naturalistic elements are illustrated.

METAL WORKING FOR SECONDARY SCHOOLS.

Molding and Foundry Practice. The work in molding shows the necessity for carefully considering draft and shrinkage in the making of patterns. Practice is given in ramming flasks for different kinds of patterns, in gate cutting and venting, and in the setting of cores. Visits are made to local foundries for the study of shop methods.

Forging. The course includes a description of appliances, with explanation of their operation and a consideration of the uses and care of the different tools and materials used in forging. The necessary processes of working iron, drawing, forming, upsetting, bending and twisting, scarfing and welding are taught. In the making of steel tools, the processes of hardening, tempering and annealing are added.



Machine Shop Work. The object of this course is to teach some of the fundamental operations in bench and machine tool work. This is accomplished by making a number of exercises, the construction of which involves the typical use of one or more tools. The exercises illustrating lathe practice include the following operations: turning plain cylinder, Morse taper, right and left hand thread cutting, bolts and nuts of standard dimensions, turning shafts for running, shrink, key and drive fits, chucking work, boring and use of reamer, finishing work on mandrel, cutting key ways on shaper and on milling machine, turning a lathe center using taper attachment of lathe, making a jack screw illustrating face plate work. On the shaper and planer, exercises are given in plain and angular planing. In bench work, exercises are given in chipping, filing, and scraping, and in the use of hand taps.

DRAWING AND DESIGN.

Freehand Drawing and Manual Training Design. These lines of work are the same in Secondary School Course as in the Elementary School Course, with certain necessary modifications to meet the secondary school problem.

Mechanical Drawing. A course of drawings for high school classes is presented in a way to meet the demands of those schools which aim to prepare their students for higher technical schools, for machine drafting, for architectural drafting, and for those, which give an all around course in mechanical drawing. Through the use of diagrams and geometrical methods, students are led to see that many problems are most readily solved by the use of drawing instruments.

PROFESSIONAL WORK, ENGLISH AND PHYSICAL TRAINING.

The general plan for the Secondary School Course is the same as for the Elementary School Course.

Time Limits.

The manual training courses are planned with the idea that fourteen hundred forty hours' work in shop, class-room, and laboratory are necessary for the proper completion of the work in each course.

The number of hours to be given to each class of work, and the order of progression in the courses, will be determined by the attainments of students entering the school.

GRADUATE COURSES.

These courses are planned for teachers of manual training who have had a preparation equal to that given at the Stout Training School for Teachers of Manual Training, and who desire advanced work along special lines.

REQUIRED WORK.

Manual Training Theory. A research and experimental study of the most important aims of educational hand work and of the general practice in public schools.

In connection with the public school classes of the city of Menomonie, where a thorough course in manual training, from the kindergarten through the high school, is given, opportunity is offered for a systematic observation of all phases of constructive work and drawing.

Decorative and Structural Design. This work presupposes adequate preparation in freehand and in mechanical drawing. The aim

is to present the necessities of structure for different materials and uses as a basis for design, to show the application of principles of design to different types of construction, and to indicate ways of teaching applied design in manual training classes in public schools. The work is an elaboration of the manual training design given in the regular courses. Strong emphasis is laid upon the quality of drawings made to illustrate the successive topics.

Advanced Mechanical Drawing. Projection drawing in its various phases is taken up thoroughly, and some of the more difficult geometrical problems are also worked out. Methods of work having the most general application are kept to the front, but alternate methods and checks are continually pointed out. The aim is to develop an ability to handle easily the high school work in drawing, to be able to solve any drafting problem that is likely to arise, and to see the application and value of technical ability acquired.

Practice Teaching. Opportunity is furnished for practice teaching along one or more of the lines of study undertaken.

SPECIAL STUDY.

One of the following lines of special study is to be selected with the approval of the director.

Psychological and Pedagogical Aspects of Manual Training. Conditions of mental growth and the effects of definite hand work upon these conditions form the background for a study of nerve structure and action, habit, the relation of physical to mental training, the relationships between mental traits, the adaptation of manual training problems to pupils of different interests and abilities, and social aspects of industrial art work. Conferences and reports on assigned readings will be the preparation for a final theme which will treat fully one of the foregoing topics.

Correlations between Drawing and Construction. For those who expect to teach freehand drawing and design as well as constructive drawing and shop work, opportunity is furnished for charcoal, pen and ink, pencil, and water color representation and design, and suggestions given as to the planning of a correlated course in the manual arts.

The Manual Training Course of Study. Through a study of manual training exercises, sequences, and general practices as indicated in school catalogs and circulars, and after becoming familiar with the recent history of manual training and its diverse aims in different localities, a course of study is planned for elementary classes, involving a variety of materials and processes, and yet with a continuous aim and carefully graded steps. The practicability as to teaching in public school classes is made an important element in determining the value of any educational scheme of hand work.

Architectural and Machine Drafting. For the benefit of teachers who wish to specialize along either of these lines, or who desire an

acquaintance with the general conditions underlying each of these fields, this work is offered. Detail drawing, planning and assembled work will each have a place in the course.

Furniture Design. Problems in furniture design and interior decoration with a consideration of structural elements in their best proportion, is followed by applications of the panel and the curved line. A part of the work includes a study of applied ornament. All drawings are dimensioned and finished with a carefully executed wash.

Manual Training Equipment. The planning of a series of manual training rooms with closets, racks, benches and general equipment; the relative costs of different tools and supplies.

DOMESTIC SCIENCE COURSES.

FOOD STUDY AND ITS PREPARATION.

The course in Food Study and its Preparation is intended to give a thorough understanding of the character, value, use, and preparation of food materials. The course involves a study of:

The Human Body. Its general structure and physiology. The structure and functions of the lungs, organs of digestion, absorption, assimilation, and excretion are studied with special reference to the physiology of nutrition, particular emphasis being placed upon the relation of pure air, pure water, and good food to the perfect development of the human organism.

A study of the physiological uses and effects of the various foods, and the correct proportioning of food material that physical development may be normal, follows the study of foods proper and completes the study of the human body.

Food. Its definition, properties, and classification. In this treatment of the subject, food is studied with reference to its chemical and physical properties, and is then classified according to its com-

position and uses in the body. Each food class, i. e., proteids, carbohydrates, fats, and mineral substances, is discussed with regard to its composition, digestion, food value, forms, and sources of supply. Supplementary to this, experiments are made to test the effects of hot and cold water, acids, alkalies, and various degrees of heat upon these classes. General principles underlying the correct use and preparation of food are discovered from this study and experimental work.

Food Stuffs. Their production, market value, appearance, selection, and care.

The study of the production of food stuffs includes the manner of growth of food materials used in their natural state or manufactured into common articles of food, and processes of manufacture where practicable. Food adulteration is treated from the scientific standpoint, tests for impure foods being taught in the chemical laboratories as part of food chemistry. Distribution, transportation, and preservation of food stuffs are discussed with reference to their effects upon the uniformity of the food supply and upon market prices.

Market appearance and selection are taught by means of visits to markets and shops, and by actual selection of materials to be used in the preparation of food. The study of the care of food material is supplemented by practical application in the care of material used in the school.

Cooking of Foods. Plain, fancy, and invalid.

The cooking courses are supplementary to the courses in the study of foods and food material, and follow them as closely as possible. Reference has been made under "Food" to the experimental work that precedes actual preparation of foods.

Plain cooking includes the preparation of simple foods, such as cereals, fruits, vegetables, meats and eggs. It also includes some of the simple food combinations, soups, breads, cake, etc. Emphasis is placed upon the intelligent and thorough preparation of ordinary materials.

Fancy cooking includes the preparation of more complex foods, salads, ices, pastries, and fancy desserts. Attention is given to garnishing and decorating foods, and to the preparation of foods for special occasions. A short course in chafing-dish cookery completes the course. In this course, emphasis is placed upon exactness, finish of work, and tasteful and suitable food combinations.

Invalid cooking is so treated that the student receives a general idea of the use of foods in sickness, and the application of dietetic principles in preparation of food for the sick. As the general use in cooking gives a thorough knowledge of foods, such a course is not necessary as would ordinarily be given in Invalid Cooking. The course includes liquid diet, use of milk, soups, koumiss, egg-nog, etc.; convalescent or semi-solid foods, eggs, omelets, preparations of meat; flour mixtures, gluten gems, wafers, whole wheat, graham; jellies and

creams; frozen desserts. Attention is given to the preparation of the invalid tray and the manner of serving foods to the sick.

Serving of Foods. Nutritive values, combinations, and cost. This course is planned to give a working knowledge of the nutritive value of our common food stuffs. It shows how they may be combined to give the correct nutritive ratio, and how they may be served to present an attractive appearance. The cost of food materials is studied at the same time, that there may be a comparison of cost and food value. This work is carried out by each member of the class planning several meals, buying the materials, superintending the preparation, and serving the meals. The food is selected with reference to the occupation of those who are to eat it, it is combined in the correct proportions, and must be purchased for a given amount that the greatest possible food value may be obtained for the money expended.

DIETETICS.

The course in Dietetics requires preliminary courses in Physiology, Chemistry, and Food Study and its Preparation. Its object is to teach the specific uses of food in the body, and the conditions under which the human organism exists, including the relation of diet to age, occupation, climate, habit of life, and disease.

The Uses of Food. Its relation to perfect development.

This is largely a review of the work previously done in Physiology and Food Study, and includes the study of the course of each food element in its progress through the body. The functions of the various organs and tissues of the body are studied, and their necessities in the way of food, that they may perform their functions properly. The digestion of foods, the chemical and physical changes that take place in digestion, food absorption, circulation, assimilation, excretion or storage, all are studied with reference to the supply of foods to the body meeting its demands.

Diet in Health. Relation of diet to age, occupation, climate, and season. In the study of diet for different ages and stages of development, the physiological conditions and conditions of environment peculiar to each age are considered, and the kind and amount of food are modified to suit these conditions. Occupation requires a similar treatment. The tissues of the body used in the work, the environment, and the amount and kind of exercise will govern the amount of food and its proportioning. Climate and season influence the diet quite materially, necessitating the same attention to physiology and environment as that required by age and occupation.

Diet in Disease. In the treatment of this subject, diseases are grouped as nearly as possible according to their dietetic treatment. The abnormal conditions are studied, and food selected that will as nearly conform to the necessities as it is possible to have it. More time is devoted to the study of digestive disorders than to any other group of diseases, as many diseases are the result of poor digestion and assimilation. Invalid Cooking is supplementary to this course.

HOME NURSING AND EMERGENCIES.

This course is based upon a systematic knowledge of anatomy, physiology, and hygiene. Its object is to teach the relation of these sciences to practical treatment of simple ailments of the human body, and to physical emergencies wherever they may arise.

Home Nursing. This includes discussion of the subjects treated and demonstration, when possible, of methods employed. The subjects treated are the sick room, its location, furnishing, and care; beds, their making, changing, and appliances; baths, kinds and effects; disinfectants, nature and use; infectious and contagious diseases, disinfection and general precautions; inflammations, reduction and treatment; taking of temperature, respiration, and pulse.

Emergencies. Some of the subjects treated are fractures, dislocations, sprains, hemorrhages, burns, wounds, fainting, hysterics, sunstroke, frost bites, antidotes for poisons, uses of bandages, and artificial respiration.

INORGANIC CHEMISTRY. Junior Year, First Semester

This course aims to cover the most essential chemistry of about twenty-five of the commoner elements. In the beginning of the study, special attention is paid to the compound, the element, the atom and molecule, chemical action, affinity, valence and atomic weight. The non metals are then studied. These are studied with special reference to their occurrence and properties emphasizing the acid forming properties. After the non metals, the commoner metals are taken in order. Here special attention is paid to the salt, alkali, and neutralization. It is always the aim to point out those properties and reactions which may have bearing upon practical questions.

FOOD CHEMISTRY. Junior Year, Second Semester.

In dealing with the three principal organic food elements, (carbohydrate, hydrocarbon, and nitrogeneous foods), both the chemical composition and those conditions which affect chemical changes in them are considered.

Among the carbohydrates cellulose, starch, dextrin, and the sugars are studied with reference to the action produced by heat, acids, and ferments. Alcohol formation and acetic acid serve as a transitional group leading to a study of the Hydrocarbons. Here butyrin, palmatin, stearin, and olein are considered together, with such changes as are produced upon them by the action of acids and caustics. Along with the theoretical treatment of carbohydrates and hydrocarbons, there is given a review of the following industries: The starch industry, glucose manufacture, sugar refining, malting, alcohol making, vinegar making, and the soap industry. The nitrogenous foods are studied in the order given in Cohnheim's classification, more attention being paid to the physical and physiological properties than to the chemical structure.

The last six weeks are devoted to the analysis of a complete food as directed in Bulletin No. 46, Revised, U. S. Department of Agriculture.

BIOLOGY. Senior Year, First Semester.

Three phases of Biology are touched upon in this course. In plant physiology a study is made of the activities of plants which have bearing upon synthesis of the food elements. After this, the problems of nutrition and growth are studied in connection with both plant and animal tissue. This study is followed by a systematic study of plant families, according to their bearing upon the question of food supply and other economic problems. The work upon bacteriology is done in this connection.

PHYSICS. Senior year, Second Semester.

During this semester there is given a brief course in the physics of heat and light. The principal topics discussed under heat are, heat and its relation to other forms of energy, expansion produced by heat, transfer of heat, specific heat, change of state, and heat of combustion.

In the work in light, the time is devoted to a study of the wave theory of light, velocity of light, propagation of waves, intensity of light, candle power, reflection, colored lights and pigments, refraction of light, and lenses.

DOMESTIC ART COURSES.

Plain Sewing. The course in plain sewing is intended to give a knowledge of the operation and application of ordinary plain sewing, to develop skill, and to provide a course of instruction and a series of models that may be made use of in teaching sewing in elementary and secondary schools.

Models. This course includes the making of models showing the various stitches, seams, and operations of sewing; the repairing of garments, darning, patching, etc.; and the application of the principles and processes learned, to the making of various original pieces. Work of this course is all hand work.

Garments. This course includes the making of one set of model undergarments by hand. The patterns are reduced to one-third of the standard size, and the small garments are trimmed in various ways to teach methods of using trimmings. In addition to this, a set of standard size garments are made. The patterns are drafted from measures; the seams are made on the machine, and the trimming is chosen by the pupil. The purpose is to develop skill in the use of materials, and ability to use the machines intelligently and skilfully.

Dressmaking. The purposes of the course are to show the application of principles and processes already learned to the making of garments, to teach the assembling of materials into a harmonious garment, and to teach the art of dressmaking.

Models. The course includes the making of such models as are necessary to the development of the subject for purposes of instruction in public schools, and to a thorough understanding of the work in hand. Some of the models used are waist and skirt plackets, finishes for the bottoms of skirts, seams and finishings for waists and skirts.

Drafting. Simple drafting from measures includes the drafting of tailored shirt-waists. Tailor drafting includes the drafting of fitted waists and skirts, and the drafting and fitting of a plain waist model.

Garment Making. This includes the drafting, fitting, and finishing of the following garments: a tailored shirt-waist, cloth skirt, fancy cloth or silk waist, and a summer dress. Such time as may remain from the regular course is utilized in making such garments for personal use as the skill of the pupil may warrant.

Millinery. This course is intended to serve the same purpose in the development of skill as is served by the other courses in Domestic Art. At the same time, the art of millinery is taught, and the possibilities of the subject as a public school course shown.

Fall Millinery includes the renovating of ribbons, velvets, silks, and felts; the renovating and changing of felt shapes; the making of buckram frames; the making of bandeaux, linings, and folds; wiring, binding, and trimming.

Spring Millinery includes the planning and making of wire frames, and the making and trimming of straw, embroidery, and lace hats.

Art Needlework. Throughout the regular courses of sewing, considerable attention is given to the application of fine needle work to articles of use. In the Art Needlework course this application is made to garments, hats, toilet accessories, and to table and household linen. The following lines of work are taught: hemstitching; drawn-work; faggoting, plain and Bermuda; and embroidery. Danish, Mountmellick, French, eyelet, and shadow.

Textiles. The course in textiles includes a brief study of the development of the industries pertaining to household art, weaving, spinning, and a closer study of the four textile fibres, cotton, flax, wool, and silk. The study of the fibres includes discussions of the fibres themselves, methods of manufacture, including processes of weaving and dyeing, selection of materials according to wearing qualities and suitability, comparison of cost of various materials, and the expenditure of money that best results may be obtained for money expended in buying fabrics.

Household Management. The course in Household Management is comprehensive in character, and is planned to give an understanding of the relation of some of the common sciences to the care of the home, and to give a practical knowledge of the various operations necessary in the management of a home.

House Sanitation. The study of location, draining, plumbing, heating, lighting, and ventilating.

Cleaning and Cleansing Agents. A study of the various cleansing agents, their chemical character, and effects upon fabrics, woods, and metals.

Marketing and Shopping. A course to give practical information in the selection of materials used in the household, their cost, and care.

Care of Materials. Clothing and house furnishings.

Serving. Taught by means of a practical application of the principles of table laying and decoration, and correct service of food.

Relation of Income to Expenditure. The study of cost of furnishing, clothing and provisioning.

The Systematic Arrangement of Household Duties. A thorough system in managing the affairs of the household, and plans for such arrangement.

Furnishing and Decoration. The fundamental principles of good furnishing and decoration, and their application to house decoration and the selection of furniture.

PROFESSIONAL WORK.

The Professional Work is considered under the following heads:

Psychological and Pedagogical Principles in their application to the teaching of Domestic Science.

Observation of Teaching and Practice Teaching throughout the Senior year.

History and Literature of Domestic Science in its development as part of a school course.

Organization and Management of Domestic Science and Art classes in the public schools.

See "Professional Work" in Manual Training Courses.

Time Limits.

Same as for Manual Training Courses.

GRADUATE COURSES.

A third year or graduate course in domestic art and domestic science is offered. This course is planned for teachers of domestic art or science who have the courses in the Stout Training School or equivalent preparation, and who wish to specialize in particular lines or to fit themselves for supervisory work. The year's work is elective, the elections being made in each case with the advice and consent of the director of the training school.

SCIENCE.

A year of science work will be offered in either course. The work of the first semester will be in Organic Chemistry. The second semester will be devoted to special food or fibre Chemistry, and

to the investigations of special phases and problems of domestic science and domestic art.

DIETETICS AND DRESSMAKING.

Advanced work in these subjects will be offered for students having the necessary preparation.

PROFESSIONAL WORK.

This course involves a consideration and application of educational principles in the organization and administration of courses of study in domestic science and domestic art.

INTERIOR DECORATION AND ARTISTIC HOME FURNISHING.

The instruction given under this head will include work in applied design, house planning, interior decoration and furnishing.

It is the aim in this course to so plan and carry out all the work as to meet the actual needs of every woman responsible for the furnishing and decorating of her house, whether much or little money is to be expended, and to this end, no effort will be spared to impress upon students the necessity of an understanding of the underlying principles of true decorative art as the only possible foundation for good work, and to lead them to recognize the fact that perfect decoration is a matter of taste always, but not necessarily one of money. Art can and should be introduced into the homes of all, and large expenditure is not essential. Today beauty and cheapness so often go hand in hand that the claim that one can not afford artistic things no longer holds, for a good article costs no more than an ugly one of the same kind, and to the purchaser, the power to discriminate between good and bad in form, color, construction, and finish means infinitely more than unlimited means. A few good things, each suited to the other, are far more to be desired than a multitude of rare, beautiful, and costly articles having no relation to each other. Overcrowding and over decorating are the worst features of the present day home, and these deplorable conditions will be changed only when people are brought to a realization of the fact that art does not demand a lot of superfluous things, neither does decoration, as too many suppose necessarily imply ornamentation. Simplicity of taste, good judgment in selection, and artistic arrangement are the most that will be required. With these, much is possible with little money; without them, much money is of doubtful value in the creation of the resful,—the truly artistic interior.

Scope of Work.

Applied Design will consist of a systematic course in design with special reference to household art, and a practical application of its principles to interior decorations and furnishings. Original designs

by the pupils, after being drawn and executed in color, will, as far as advisable, be carried out in suitable materials.

Color and Color Harmonies will be carefully considered as relating to interiors:—the effect of light upon colors and the effect of colors upon the light of a room; the relations of colors; appropriate color schemes for each apartment and for an entire house; the effect of colors upon the eye, and the mind.

House Planning will include: original floor and wall plans involving a study of the best possible arrangement of rooms within a given space; consideration of the proper dimensions of rooms; proportions; best axial arrangement; the best distribution and placing of windows, doors, fire places, stairways and closets.

Interior Decoration will deal thoroughly and consistently with the subject of walls as to color, space divisions, kinds of coverings, appropriate designs; floors—kinds, best treatment, and coverings; windows—uses, desirable curtains, and draperies; doorways and openings; hangings and decorative articles.

Furnishings will relate to the study of furniture—historic and modern with special reference to adaptation of form to use, beauty of form, materials employed, finish, harmony and cost.

TRAINING CLASS IN SEWING ROOM

KINDERGARTEN TRAINING COURSES.

JUNIOR YEAR.

First Semester.

	No. Periods per week.	No. weeks.
Psychology	(5)	18
Kindergarten Theory	(3)	18
Kindergarten Technics	(2)	18
Freehand Drawing	(5)	18
Music	(5)	10
Expression	(5)	8
Physical Culture	(2)	18

Second Semester.

Kindergarten Theory	(3)	18
Kindergarten Technics	(2)	18
Mechanical Drawing	(2)	18
Nature Study	(5)	8
Composition	(5)	10
Physical Culture	(2)	18
Chorus Practice	(1)	18
Elementary Sewing (optional)		12
Observation of Kindergarten Work	(5)	18

SENIOR YEAR.

First Semester.

Kindergarten Principles	(2)	18
Pedagogics of Kindergarten and Primary Work	(3)	18
Child Study	(2)	18
Physical Culture	(2)	18
Chorus Practice	(1)	18
Teaching	(12)	18
Elementary Woodwork or Cooking (optional)		12

Second Semester.

Kindergarten Principles	(2)	18
Pedagogics of Kindergarten and Primary Work	(3)	18
History of Education	(2)	10
Literature	(5)	18
Physical Culture	(1)	18
Chorus Practice	(1)	18
Teaching	(8)	18

Psychology. See Psychology in Manual Training course. Special attention is given to the psychology of child life.

Kindergarten Theory. Modern educational theories are studied for the special purpose of securing a proper basis for correct educational practice in the kindergarten and the elementary schools.

Kindergarten Technics. A study of the educational value and uses of materials suited to the needs of children in the kindergarten and primary grades; training in the manipulation of the various materials considered; methods of presentation in use of materials in class work. This involves a consideration of the traditional "gifts" and "occupations," the educational purposes they are designed to serve and methods of use; also a consideration of other materials and forms of material, which may be used with profit in place of some of the gift and occupation work prescribed by Froebel or supplementary to portions of that work; methods of use; the place of work with the various materials employed, in the kindergarten and primary program.

Child Study. A survey of the results of the work of recent investigators in the field of child study; methods of child study; scope and method of child study for the student in the training school for the kindergarten and primary teacher.

History of Education. This work is limited to a brief consideration of those educational movements which affect modern elementary education, and the influence of which can be made apparent to students.

Kindergarten Principles. A consideration of educational principles specially applicable to the kindergarten and primary school stage of development; their importance in determining the character, amount, and order of work to be given pupils during these stages of development.

Pedagogics of Kindergarten and Primary Work. This work is based upon the preceding work in psychology and educational theory and runs parallel with the course in Kindergarten Principles. It aims to develop good method in Kindergarten and Primary work as the outcome of correct theory based on sound educational principles.

Nature Study. This course aims to broaden the student's knowledge of nature as well as to furnish material to be used later in practice. The study draws from all the branches of natural science for its material. Under the physical sciences are discussed: matter, changes of state, composition of air, water, and soil, temperature, and explanations of the different weather conditions. This is followed by a discussion of the relation of inorganic substances to animal and plant life. Plants are then studied with reference to methods of growth and cultivation, and types of different families of plants are also considered. The structure and habits of some of the commoner animals are studied. Among those briefly considered are types of worms, crustaceans, insects, molluscs, fishes, birds, and

mammals. The types of plant and animal families are studied largely in the field. Excursions take the place of part of the class work when practicable.

Music. The required work in music is: 1st year, note reading, sight singing, notation and theory; practice singing of Kindergarten Songs; and the proper treatment and training of the child voice. 2nd year, Chorus practice, part singing, and voice training. (Seniors and Juniors.)

Expression. This work consists chiefly in drill exercises in reading selections of various types of composition in order to secure purity of tone and good expression. Practice is given in telling stories and in reciting selections from memory.

Physical Culture. The work in physical culture is two-fold in character. Regular work in the gymnasium and natatorium is given under a competent instructor. In addition to this work, students are given practice in the kindergarten games both for the physical exercise and training involved, and for the necessary skill in conducting the games with the children in the kindergarten.

Freehand Drawing. The course in drawing is planned to give such instruction in the fundamental principles of drawing, in color work, and in blackboard sketching as will meet the needs of teachers in illustration work in the kindergarten and primary school.

Mechanical Drawing. This course is given primarily for the purpose of developing the students' perceptive powers, training in habits of close, concentrated attention, and accuracy in work.

Composition. See work in "English" in Manual Training Course.

Observation of Kindergarten Work. See "Observation" in Manual Training Course.

Practice Teaching. See "Practice Teaching" in Manual Training Course. During the Senior year students are given practice teaching in the kindergarten and primary grades. Three kindergartens are used as practice schools. In the Central School Kindergarten, the students take entire charge of the work each forenoon, under the general supervision of the Director of the Kindergarten Training School. In each of the other kindergartens the work is in charge of a kindergarten director who has the immediate supervision of the practice teaching. During the year each student has experience in each of the three kindergartens thus having an opportunity to come into contact with widely different types of children, and to work under different conditions, affording a varied experience. Each student is required to devote some time to teaching in primary grades. Those students who wish to make a specialty of primary work have the greater portion of their teaching in those grades.

The primary practice teaching is done in the city primary schools under the general direction of the Primary Supervisor, and under the immediate supervision of the grade teacher.

All students doing teaching are required to plan each lesson with care and to submit the plan to the proper person, director or supervisor, for criticism and final approval. The actual work of teaching is criticised at a subsequent hour by the supervisor in charge. Frequent meetings of practice teachers are held by the supervisor, to discuss typical errors and suggest plans for improvement.

The opportunities afforded for practice teaching are almost ideal in respect to variety of conditions existing in public school systems, thus giving the extended and varied experience needed for successful work at the outset of one's teaching career.

GRADUATE COURSES.

For students who have completed the regular two years' course, or who have had equivalent training elsewhere, and who wish to prepare themselves for primary work in Normal Schools, or as supervisors of primary schools or kindergartens, the following advanced course of one year is offered.

ELEMENTARY EDUCATION.

Through assigned readings, lectures, and discussions, a study is made of the legitimate scope, purposes, characteristics, and methods of elementary education, with special emphasis on the work of the primary school.

This study involves a consideration of the following topics:

Essential characteristics of the product of the elementary schools.

The raw material,—the child to be educated.

The lines and order of development and growth in the process of education.

The materials and forces which may be properly utilized as educational means.

Methods of utilizing the appropriate materials and forces.

INSTRUCTION AND SUPERVISION.

The following topics will be considered in detail by means of lectures, assigned readings, quizzes, and illustrated exercises.

Conditions of Effective Supervision.

General Knowledge, (a) of the ends to be secured through the process of education; (b) of the materials and forces available in the educative process, and of their appropriate use under varying conditions.

Special Knowledge, (the result of inspection), (a) of the status of the child being educated, at any given stage of progress; (b) of the materials and forces used by the teacher as educational means, and of the methods employed in such use.

Utilization of the General and Special Knowledge in the determination, (a) of the necessary changes in materials and forces by substitution of others for those employed, or by change in order of use;

(b) of necessary modifications of method employed in use of materials and forces.

Tact and skill on the part of the supervisor in securing the necessary changes and modifications by the teacher.

HANDWORK IN THE KINDERGARTEN AND PRIMARY SCHOOLS.

The aim is to show the possibility of extending the scope and modifying the character of the handwork ordinarily employed in the kindergarten, and of making the primary handwork a systematic and rational development of that begun in the kindergarten.

Students will be given training, on the art side, in the use of the pencil, brush, and crayon in illustrative work; and on the construction side, in the use of the different materials properly employed in handwork in the kindergarten and primary school.

Students 1905----1906.

MANUAL TRAINING.

SENIORS.

Barber, Ellery W., Edgerton, Wis.
Condie, Robert H., Menomonie, Wis.
Cole, L. M., Menomonie, Wis.
Hill, Glenn H., Oconomowoc, Wis.
Holeton, Geo. R., Abbotsford, Wis.
Marsden, Rollin, Edgerton, Wis.
Olson, Louis F., Menomonie, Wis.
Stetler, Amos D., Menomonie, Wis.
Towne, Allen D., Lodi, Wis.
Wall, Stephen F., Mondovi, Wis.
Webster, F. Huse, Elkhorn, Wis.

JUNIORS.

d'Argent, France, Oregon, Wis.
Best, Louis F., Green Bay, Wis.
Beers, Valdamere, Honey Creek, Wis.
Fuller, Ira S., Pepin, Wis.
Jacobson, Harry A., Burlington, Wis.
Knowlton, J. F., Ingram, Wis.
Raeth, Adolph, Milwaukee, Wis.
Smith, Theodore H., Delavan, Wis.
Works, Clarasia M., Augusta, Wis.

DOMESTIC SCIENCE.

SENIORS.

Adams, Mabel, Madison, Wis.
Arnold, (Mrs.) Marion E., Marinette, Wis.
Babcock, Nellie E., Mineral Point, Wis.
Bemis, Edith, Waupaca, Wis.
Christianson, Erica, Menomonie, Wis.
Dana, Nina, Fond du Lac, Wis.
Gott, Amy R., Viroqua, Wis.
Gray, (Mrs.) Margaret B., Menomonie, Wis.
Harden, Grace M., Augusta, Wis.
Holthoff, Mabel, Ripon, Wis.
Hood, Ruth, Fairchild, Wis.

Moran, Cornelia P., Baraboo, Wis.
Nott, Madge, Menomonie, Wis.
Steves, Edna, Menomonie, Wis.
Weinfeld, Clarice, Menomonie, Wis.
Whitham, Martha, Platteville, Wis.

JUNIORS.

Adams, Nellie Tucker, Sterling, Ill.
Ames, Maye S., Waneka, Wis.
Blackburn, Ann, Madison, Wis.
Gagnon, Lynne, Marinette, Wis.
Gleeson, Lucy, Fond du Lac, Wis.
Ingalls, Marian, Menomonie, Wis.
Jahn, Augusta, Alma, Wis.
King, Dorothy, Waupun, Wis.
Lander, Florence, Beaver Dam, Wis.
McAllester, Margaret, Oshkosh, Wis.
McGillivray, Veda, Black River Falls, Wis.
Miller, Letta M., Oshkosh, Wis.
Nelson, Hattie T., Lodi, Wis.
Pattison, Margaret, Durand, Wis.
Pugh, Elizabeth, Monroe, Louisiana.
Schedler, Martha, Oconto, Wis.
Sniveley, Lettie E., Menomonie, Wis.
Stalnaker, Maud, Hudson, Wis.
Sweet, Barbara, Fond du Lac, Wis.
Watts, Edith L., Milwaukee, Wis.
Worden, Jean, Menasha, Wis.
Young, Carrie M., Beaver Dam, Wis.

KINDERGARTEN.

SENIORS.

Austin, Mattie M., Madison, Wis.
Breck, Henrietta J., Merrill, Wis.
Bretl, Lydia L., Algoma, Wis.
Burrowes, Jayne E., New Richmond, Wis.
Caesar, Alice, Rice Lake, Wis.
Dahlberg, Grace O., Pineville, Wis.
Grover, Gussie R., Waupaca, Wis.
Hatch, Elsbeth H., Baraboo, Wis.
Hugdahl, Helen A., Menomonie, Wis.
MacMillan, Evelyn R., Neillsville, Wis.
Momberg, Elizabeth C., Wausau, Wis.
Peck, Bessie, Hayward, Wis.
Powers, Laura B., Black River Falls, Wis.
Slagg, Sadie L., Fort Atkinson, Wis.

Smith, Hattie L., Fort Atkinson, Wis.
Von Briesen, Dora, Columbus, Wis.
Zander, Henrietta C., Algoma, Wis.

JUNIORS.

Brown, Bessie R., Ashland, Wis.
Brown, Lillian L., Ashland, Wis.
Drowatzky, Bertha E., Tomah, Wis.
Dumville, Ida W., Marinette, Wis.
Hanton, Leone B., Superior, Wis.
McCutcheon, Susan, Thorp, Wis.
Murphy, Minnie E., Prentice, Wis.
Lindley, Anne B., Chippewa Falls, Wis.
Pingel, Minnie D., Tomah, Wis.
Scribner, Fannie D., Superior, Wis.
Sjolander, Mabel L., Onalaska, Wis.
Sutherland, Hallie B., Duluth, Minn.
Strand, Emma, Menomonie, Wis.
Thomas, Myrta E., Eau Claire, Wis.
Vernon, Jennie E., Madison, Wis.
Walter, Anna, Monroe, Wis.
Willson, Martha L., Edgerton, Wis.

ENROLLMENT BY YEARS.

	1903-4	1904-5	1905-6
Training School for Manual Training Teachers	3	15	20
Training School for Domestic Science Teachers	21	36	38
Training School for Kindergartners	35	31	34

Domestic Science and Art in the Public Schools.

Laura G. Day, Director of Stout Training School for Domestic Science Teachers.

It yet remains for some friend of the new education to find an adequate name for the subject that we have under discussion. Possibly no one name will be sufficient for so extensive a subject. It is possible that the three names, Domestic Science, Domestic Art, and Domestic Economy will be necessary to express fully what we mean when we speak of the acquisition and use of the body of information and skill necessary to intelligently superintend a home and to understand it in its social, industrial, and economic relations.

The necessity for the possession and practice of this knowledge, which for lack of a better term we will call Home Economics, was the original incentive to its introduction into public school work. The feeling that the greatest effectiveness in the education of young women was not being obtained coupled with an awakening to the influence that changed industrial and economic conditions were exerting upon the home led to the introduction of Home Economics into some of our institutions of higher education. The girls' schools and colleges of the east were the pioneers in the movement. This recognized need for better home training and the realization that because of existing conditions, training of the character necessary could not be given in the homes were the first causes of the introduction of the work into the secondary schools of America.

It was the utility value of the subject and not its educational value, that offered itself as a solution to the problem of how to obtain a more useful and effective education for the girls and young women who were leaving the public schools and finding their places in the communities of which they were a part. That this demand for a more practical education has come from without and not from within the schools will be revealed by an investigation into the circumstances that have led to the introduction of Home Economics into almost any school system where it is taught as a part of the regular curriculum.

We should not lose sight of the fact that our courses in Home Economics must recognize this necessity for better home training and that in order to understand the true educational value of such a subject as this, there must be a thorough understanding of its practical application. The fact that the subject has training value of a high order should not obscure our vision to the necessity for a wider intelligence in matters of home administration on the part of the average girl in the average home. If any subject is entitled to a place in a school system it must have training value. This training value will be determined by a consideration of the subject itself and by a

consideration of the nature of other subjects, furnishing possible teaching material, that may be substituted for the one under discussion.

To establish a claim to training value, a subject must contain valuable usuable knowledge or it must require for its mastery the development of certain mental activities that result in increased power on the part of the one receiving the training. It must also prove that it is better adapted for use and training purposes than any subject that can be substituted for it.

That Home Economics has this training value will be shown by an analysis of the various activities developed by a systematic course in it. It has been failure on the part of community and educators to recognize this fact and to appreciate the educational possibilities of the subject that has led to its failure where it has not proved a success. In the adjustment to the requirements of a public school course either the educational or the utility side of the work has suffered and one has been as disastrous to its success as the other.

In order to understand fully the value of work of this character in an educational system, it will be necessary to discuss the following points: the scope, utility value, educational value, relation to other subjects, and the subject matter of Home Economics.

What is Home Economics? What subjects does it embrace? The common idea seems to be that it is a course in cooking and sewing. These are only two phases of the subject and in the correct planning of a course of study they should assume their correct proportions.

To arrive at an understanding of the various subjects related to Home Economics let us consider the necessities arising in the life of a woman who is mistress of a home. One author in attempting to define Domestic Economy has said that, "It is the study of the laws that govern and underlie the maintenance, growth, and development, physical, mental, and moral of the home. It is also the study of the social and industrial relations of the home and the life of the family to that of the community." I should go a step farther and say that it is not the study, alone, but the application of the knowledge of these principles and laws to the circumstances of life that makes good Domestic Economy in our homes.

We may roughly divide this subject matter into two groups, the first pertaining to the home itself or the science and art of the home, the second pertaining to the relation of the home to that which is external to it, or the social and economic aspect of the home.

Considered from the first standpoint what are the conditions that arise in the life of the modern woman? We hear much in these days of the scientific attitude. It is sometimes defined as a spirit of investigation, a seeking to discover the laws and principles that govern phenomena and operations of various kinds. This seeking of knowledge for the sake of knowledge may be interesting and to some extent instructive but unless, following the investigation of principles, an application of the accumulated information is made, the knowledge does not become effective and is of little use to the individual or to his environment. In the application of these underlying principles, we develop an art. Thus we see how closely science and art must be related if the one is to be useful and the other is to be effective. It is this close relation between the science and the art of the household that gives the study under discussion its great value.

To correctly understand this value one must realize the scope of the subject. It has to do, first, with the nutrition of humanity. The all round development of the human race depends largely upon its

manner of feeding. Through the physical we reach the mental and the moral. It has to do with housing the human race and the furnishing of a proper environment for the family. Not until the correct building, furnishing, and care of dwellings and public buildings is understood by the average individual can we look for great improvement in our racial conditions of health. It also has to do with that development of the human race that is the result of correct clothing and proper exercise.

The three primary necessities of man are food, clothing, and shelter. That these may be furnished to him and used by him as they should be means that the woman in the home must possess a high order of intelligence and executive ability.

It means that she must have a knowledge of the chemistry of foods and cleansing processes, of physics, physiology, bacteriology, hygiene, and sanitation, and that she must understand the application of that knowledge to every day life. She must have a knowledge of food materials, their economic value and correct combinations as well as of their preparation and use. She must understand how to care for children, how to care for the sick and injured, how to guard against disease and contagion as well as how to maintain her family in a healthy condition. The problem of clothing a family calls for a knowledge of fibres and fabrics, their assembling into garments, and the effects of clothing upon the health and development of the individual. The planning and furnishing of a house includes an understanding of the correct location, proportioning, plumbing, draining, heating, and lighting as well as an understanding of the fundamental principles of good decoration and furnishing. In a word, the homemaker must know how to maintain and develop her family to the maximum of perfection.

In addition to this scientific knowledge and the ability to apply it there is, in the second place, a necessity for understanding the organization of the home in its relation to the business world and to the social and economic life of its environment. If we are to extend the scope of our civic training from the individual to the home and through the home to the community, if in other words, the duty of the public schools is to develop a high ideal of citizenship, we will find in the correct teaching of the influence of the home upon society and the state valuable material for the accomplishment of this purpose. When through an understanding of economic problems as related to himself and to his relation to those around him, to his home and to the community, the young person is brought to understand that the home is the unit of the social structure and that the condition of a society depends upon the condition of its homes, we have gone a long way toward accomplishing the first purpose of education, the production of a high type of American citizen.

This in a general way outlines the range of the subject. That this is all there is to the problem of home-making is not contended. The moral and ethical side of the question has not been discussed. This is merely a presentation of some of the practical possibilities. That the teaching of Home Economics alone will do all these things, or that it is the only thing that will do them is not claimed by its most enthusiastic supporters. That it furnishes an excellent opportunity for strengthening such scientific and economic lines as are already being taught by furnishing a direct application of principles involved cannot be denied by any thoughtful educator. That it furnishes a wider range of subject matter more intimately associated with the experience of the pupil than almost any other subject will also

appeal to one who appreciates the value of linking the school experience with the sum of experiences already possessed by the pupil.

To the community at large the purpose of an organized study of Home Economics is the production of better homes, more home refinement, and through these a higher national type of home and better citizens. That any public moneys expended in such training will be well invested because of the greater productive capacity of the individuals trained and because of the improved conditions of the community due to their influence has been proved beyond a doubt by actual demonstration. This fact is one of the strongest arguments in favor of the incorporation of Home Economics into the regular curriculum of the public schools.

Another argument of equal strength is the direct effectiveness of the work. When we consider that sooner or later ninety-five per cent of the girls trained in the public schools become home-makers, we appreciate the value of this argument. A young man may use his knowledge of Manual Training in his preparation for his life work, he often does, but that it will give him actual usable material in that preparation is much less likely than that a young woman will use her knowledge of household matters. If education in its highest sense is preparation for life, we should not undervalue this fact.

But while the utility value of this work was the original argument for its introduction as a study it has a training value so closely connected with this utility, that it is impossible to separate the two. Though it entirely justifies itself on the ground of usefulness, it has been found to have an educational value that places it on an equality with any subject of the usual academic course.

Manual Training, or some form of hand work, has been generally accepted as a valuable addition to the modern educational idea. That it requires well organized and disciplined mental activities to direct the motor activities necessary in the correct performance of an exercise or a piece of work is easily shown by an analysis of the activities involved. The concentration of attention necessary to understand the various processes, the planning and organizing of knowledge necessary to a clear cut idea of what is to be done, the exercise of will in the accomplishment of the purpose, all are steps in fixing certain desirable mental habits and in developing mental power. That there is a certain development of skill and ability to control external conditions in addition to the mental training is not the least advantage of this phase of educational effort.

Educationally, training in Home Economics will produce the same mental development that training in Manual Training will produce. It will do more because of the opportunity for direct application offered by the home. "Applied knowledge is power" and power thus generated will react upon the school, giving greater interest and greater capacity for development. Greater effectiveness in the home means greater effectiveness in the school.

Because of the concrete nature of these lines of work and the variety of opportunities they afford for practical application, there is greater opportunity for the formation of correct habits than in many other lines of work. Habits of attention, concentration, accuracy, definiteness, promptness, neatness, dispatch, and industry may be formed or strengthened by correct conduct of exercises in Home Economics, and if acquired in youth will be of inestimable value to the individual throughout life.

The development of worthy ideals is one of the necessities in a well-rounded and successful character. The development of a high

ideal of home life, of the relation of the individual to her surroundings, of her relation to her work, and of her integrity to her idea of perfection, all contribute to this end.

The social equality that is the result of class interest in and performance of the same lines of work and investigation leads to an appreciation of the true value and beauty of labor well done. This in view of the existing social conditions should receive due consideration.

Add to this the ability to compare, reason, and select or to think logically and purposefully about the work in hand, whatever it may be, and the result will be a clear-minded, self reliant young woman, a young woman of character, mental ability, and self-poise; one who maintans a helpful attitude toward those about her and who is able to apply good common sense to the every day circumstances of life.

In attempting to incorporate a Home Economics course into a regular school system we have usually gone to one of two extremes. Either it has been correlated with every other subject in the regular course with the results which usually attend the introduction of such glittering generalities into a systematic order of things, or it has been added to the course of study as an afterthought. Afterthoughts are credited often with being of more importance than what has preceded them but if left in the isolated condition that too often has been the fate of this special line of work, they cannot exert much influence upon the development of the scheme as a whole. There has been, as yet, little attempt in most of our schools to thoroughly systematize and organize the variety of knowedge that may be included in this subject and still less attempt to teach this knowledge with any reference to the subjects already in the general course of study or in accordance with psychological and pedagogical principles.

Any course of study in Home Economics if it is to be successful must be shaped and modified in accordance with the conditions of the community, the character of the school, and the development of the pupil.

The teacher of discrimination will know that particularly in this line of work, there are certain local conditions that must govern her in the selection of her subject matter and in the arrangement of her course of study. There is just as great teaching opportunity in teaching what may be of service to the pupil in her own experience as there is in teaching an application of the same principle in such a way that the only use of the exercise ever made is the school use. There is even greater value in it for the pupil for in addition to the training she has received in the school exercise there has come a larger training in her home effectiveness and this larger training will manifest itself in renewed interest in and closer attention to similar matters being taught in school.

Next in importance to the community surroundings, the teacher organizing a course in Home Economics will consider the school itself and its relation to the community. If the work is to become a part of the regular course and not be simply a course of cooking and sewing added to the other requirements, great care and thought will be required to make the necessary adjustment. In most schools until the work is established this adjustment must be made to a great extent by the one who carries the special line of work. Because it is impossible at the outset to revolutionize a complete course of study, there is all the greater necessity that in every way possible the Home

Economics course should supplement and reinforce the work already being done by the pupils.

Apparently the pupil is the last consideration in this discussion of planning a course of study. Possibly if we look at this matter from the view point of the rhetorician who places his most important proposition last for purposes of emphasis, we will get a more correct estimate of her importance.

Should a course of study be planned with reference to the development of the individual pupil? I believe, and my belief is founded upon observation and experience, that the two foregoing considerations are the real ones upon which the course of study itself should be founded.

There is in every subject which deserves a place in a public school course a certain logical development of the subject itself, certain steps in its unfolding that are necessary if it can rightfully claim any training value whether that training be of mental activities, of motor activities, or, as in the case under consideration, of both. There is also in every subject a certain body of information to be taught, a certain well-rounded comprehension of the subject to be gained by the pupil if his teaching is to be effective. This is as true of Home Economics as of any other subject.

The questions that confront the teacher are, What shall I teach? How shall I adapt my teaching to the conditions and experiences of my pupils? In a close study of the home and school environment of her pupils, I believe that she will find the answer to both these questions provided she herself has her subject thoroughly in hand and remains true to her standard of excellence. Let her adaptation of the method of teaching be in accordance with the needs and experience of the pupil and not in accordance with her inclinations or desires.

In this line of work as in many other lines of work there is a tendency to let "self expression" run riot and here as in many other places in our school system is a place for the administration of the saving grace of common sense. That the child has a right to the development of all his God-given faculties, no one will deny; that he has a right to the indiscriminate use of these faculties in the working out of his own sweet will, must be denied by anyone who has studied the unfolding of the human mind and watched the gradual development of judgment through experience. That a child, boy or girl, should do a certain thing at a certain time because it is best that he should do it is a wholesome lesson in self-control; that he should do it right is right. There is good discipline in it.

Experience goes to show beyond a doubt that the most effective course of study is one based upon certain fundamental principles; having a certain logical sequence of mental and physical development; certain exercises for the development of certain faculties of the child, and underlying all the purpose to have her think clearly and to a purpose about whatever the work in hand may be. If there is in mind before construction or performance a definite idea of what is to be constructed or done and the methods and the principles involved, the application will not lack originality nor will the nature of the completed exercise be a puzzle to the beholder until elucidated by the constructor.

This brings us to a consideration of the relation of Home Economics to other lines of work. So far efforts in correlation have been for the greatest part efforts to relate in some way, by however great stretching of fact and imagination, subject matter and teaching

material that for most educational purpose and for all practical purpose would better be disassociated. The results of this so-called correlation, as can easily be seen, are dissipation of powers of concentration and the failure to assign to subjects studied their correct value and place in the established order of things. If there is to be correlation let it be along practical, sensible, time-saving lines. Let it be accomplished by efficient teaching of the subject itself and by an intimate understanding of the relation of this subject to others being taught. What we need in our public schools is not the addition of more subjects to the course of study but a more thoroughly connected, systematic, and time-saving arrangement of the courses that we already have. What our pupils need is a better understanding of the relation and application of these courses to their practical experience and to the problems of life.

What is needed to make this work most effective is:

First, that the subject itself be presented and studied in as systematic and educative way as any subject of the course. This means that it must be thoroughly organized, have a certain logical sequence, and be presented in accordance with the same pedagogical principles that underlie the presentation of other lines of work.

Second, that there be an effort on the part of the special teacher to reinforce such work on the part of the regular teacher as may relate to her particular line of work. To this end the special teacher must understand the place and methods of presenting regular lines of work that may be emphasized in the course of her special instruction. Problems in the practical application of mathematical principles, exercises in the use of correct language in accurately describing methods and processes, furnish examples of this form of correlation.

Third, that where subject matter applying to special lines of work is just as valuable for purposes of instruction as subject matter that has no application and where the use of this special material does not interfere with the effectiveness of the regular course of instruction, such substitutions be made as are practicable. The elementary science work in our schools furnishes an excellent basis upon which to build work of this kind. Much of Chemistry, Biology, and Physiology may be taught with reference to their direct application to the study of foods and their uses as well as to other household problems thereby making the science work more effective and adding to the general understanding of the special work.

Fourth, that there be a careful arrangement of all special lines of work that there may be no time lost for the pupil by the teaching of subject matter that has no application when a practical application may be made. The application of design and color harmony in dressmaking, art needle work, and household decoration, furnishes us an opportunity to make effective application of the general principle of art work.

If in addition to these considerations, the teacher keeps her work as a teacher clearly in mind, there can be no question of the value, both educational and utilitarian, of Home Economics.

The question that she must answer is, "how shall I best prepare these young people who are placed in my care to enter the life outside the school-room, to take their places in the community, and there to find themselves masters of the conditions that surround them?" If in answering this question there comes the conviction that her duty to the public will best be discharged by rendering the average girl a useful woman, she will at least in part have solved the problem.

Manual Training Courses.

FOR THE GRADES IN THE MENOMONIE SCHOOLS, 1906---1907.

The following course represents the work in Manual Training in its present stage of evolution in the Menomonie Schools.

General Purpose. To give the pupil a broad experience in using a number of materials and tools which not only affords a variety of mental activity and discipline, but which give a large opportunity for self expression and progressive individual growth.

Through a study of the processes underlying several fields of manual occupation, an acquaintance is given with some of the conditions necessary to success for those who may be attracted towards those lines of work upon leaving school. Kinds of exercises are chosen which will open up typical phases of work in wood and metals, paper, textiles, and clay.

The general arrangement of exercises is such as will be conducive to the best physical development. Large free hand movements, with little requirement for delicate adjustment of the muscles of the fingers, are presented in the first years of the course, but these movements lead directly to more careful manipulation, and to a higher degree of accuracy in work done in later grades. The last work is such as to require considerable skill on the part of the pupil, and a general ability to express himself well through handwork.

The work is planned so that each exercise supplies the training necessary to properly begin the next exercise, and so that each problem requires the best concentration of effort the pupil is able to give. A familiarity with the principles of construction is acquired, and an effort is made to develop in each pupil an ability to design and to appreciate good design.

A course in constructive drawing is carried on in connection with all the tool work. Originality is encouraged in so far as it remains within the bounds of appropriate form, and the pupil's capability, as developed by preceding exercises.

The work of the Manual Training course is closely related to that of the Art Department throughout. The underlying idea in the course is to present a certain amount of prescribed work, involving such fundamental and related operations as seem necessary for the best development. Accompanying the prescribed work, opportunity

and encouragement are given to each individual to show his originality and to exercise his inventive powers, either in making a variation of the models, or in the form of free work.

KINDERGARTEN.

Paper and Cardboard. Cutting to lines. Simple free cutting of angular objects and of free curved objects. Geometrical cutting. Folding and cutting based on eight-inch squares. Symmetrical cutting based on the half and quarter folds of the square and oblong. The making of small booklets and boxes combining paper and cardboard.

Building Blocks. The use of Froebel's larger gifts in simple combinations to represent things within the child's environment.

Sand Pile. The activities of play life are encouraged here as a means of recreation and development. Topographical features are illustrated.

Clay. Mass work in modeling geometrical forms and then applying these types to fruits and vegetables and to forms of construction. The modeling of figures in action.

KINDERGARTEN CHILDREN IN NATURE STUDY

FIRST GRADE.

Paper and Cardboard. Free cutting from pose and to illustrate stories, songs, trades, and games. Simple folding to form envelopes and booklets. Folding and cutting of eight-inch squares resulting in a construction which can be measured by the child. Folding and cutting of symmetrical forms. Cutting and fastening of cardboard to form constructions appropriate to the material which shall apply number concepts and train the fingers for later work. The materials used are various papers, two-ply and three-ply cards, silk floss, and glue. The tools are scissors, ruler graded to halves and quarters of an inch, and punch. Some of the models are picture mount, paper sack, book mark, pin-wheel, post card, book for drawings, cardboard box.

Clay. The application of type forms to small objects, modeling from memory of house forms, the modeling of ornament.

Weaving. Children draw and then cut one inch or one-half inch warp strips upon an eight-inch square, leaving an inch margin. By means of different colored wood strips they work out various designs. As an application of some of the simpler designs for borders, dolls' dish cloths of cotton wicking are made upon jute-board looms. Size of loom six by eight inches, and of doll's dishcloth five by seven inches.

Ten thirty-minute periods weekly.

SECOND GRADE.

Paper and Cardboard. Free cutting from objects and from memory percepts. Geometrical cutting used as a basis for design. Symmetrical cutting carried as far as the eighth fold of the square and oblong. Cutting and fastening of cardboard to form such models as blotter, recipe book, circle maker, lamp shade, label, pen box, book mark, box loom.

Clay. Tile and panel work through the outlining and the building up methods, giving a study of incised and of relief decoration. The making of simple pottery pieces such as bowls, plates, cups and saucers, and candle sticks. The making of Greek and of Indian pottery with their characteristic decorations. Designing of vase forms

Weaving and Basketry. The making of a small towel or rug, dish cloth or teapot holder, bag, or curtain upon a paper box loom which has been previously made by the pupil. Designing in checks, plaids, or stripes, or with free units of ornament. The making of coiled mats and baskets. The materials used are miner's wicking, knitting cotton, and raffia.

Ten thirty-minute periods weekly.

THIRD GRADE.

Paper and Cardboard. New tools are added in the third grade and work done with heavier materials, such as five-ply, and six-ply

paper. The new equipment is a six-inch 45 degree triangle, compass, skew knife, and desk board. The models include match box, candy box, post card box, button box, filing case, scrap book, notebook, and portfolio.

Clay. High relief panel work using geometrical and conventional flower designs. The making of statuary models using children and animals at rest and in action from pose and from pictures. Pottery making by coiling and using small lumps of clay, decorating by cutting the surface with a stick, coloring, and firing. Modeling from still life.

Weaving and Basketry. A study of weaving with the hand loom, shuttle, and heddle, and with a modification of an Indian loom. The making of a nine-inch by twelve-inch rug with original center piece and border design. Weaving around cardboard forms to make shopping purse, hand bag, cap, and sweater. Knotting of twine bag. Making coiled raffia baskets using wool twine as filler, with loop stitch or tie stitch.

Ten thirty-minute periods weekly.

FOURTH GRADE.

Paper and Cardboard. The use of heavy jute and pulp boards and binders' board, and the addition of a six-inch 30-60 degree triangle and a two-foot rule, enlarges the scope in the fourth grade along the line of more solid constructions and heavy book covers. The models include a cylindrical pencil box, fancy box, taper holder, waste paper holder, and simple book binding. Boxes are made with reinforced corners and small files for clippings. Books for drawings and for mounting illustrations are made and bound in cloth. Book repairing adapted to the pupils' capacity occupies the latter part of the year and includes replacing loose leaves, repairing torn leaves and frayed corners, gluing supers, sewing and gluing loose sections.

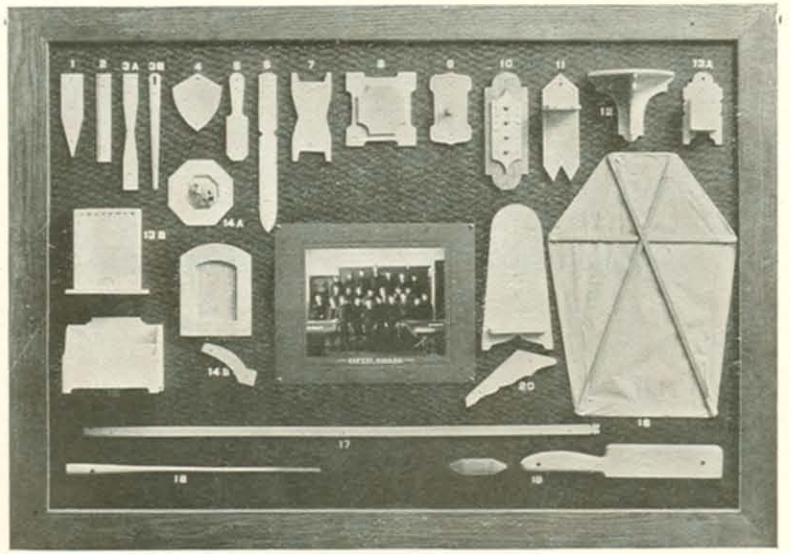
Clay. The building of pottery forms using slip decoration and low relief designs, glazing, and firing. The models are bowls, cup and saucer, low and high candle sticks, without and with handles, small jar and cover, vases, open dish for various uses. Modeling from memory the form of an individual home or local public building, modeled design in high relief and in the round.

Weaving and Basketry. A study of looms and textiles and the conditions necessary to modern machine weaving. The making of union rugs two feet by three feet, on a large harness loom by special groups. Designing and coiling baskets with colored raffia using the figure eight stitch and number four reed as filler. Making porch pillows by groups of pupils.

Woodwork. The course in woodwork begins with the construction of models embodying certain fundamental principles presented in the forms of sequenced exercises, each one growing naturally out of one or more preceding exercises. The sloyd idea is emphasized during a part of the course. The elementary woodwork which is

carried on through the last half of the fourth and first half of the fifth grade is so arranged that the tools required are few and simple: the pencil, try square, bench hook, sloyd knife, back saw, coping saw, hammers, smoothing plane, brace and bit, file, skew carving knife, and background punch. The models are made from eighth, quarter, or half inch basswood and pine, prepared in most cases to thickness before being given to the pupil; name plate involving straight edge cut, cross cut, and oblique cut; ruler involving these and bevel cut; match scratcher, warp stretcher and weaving needle, shipping tag, pencil sharpener, paper knife, paper file, yarn winder, key rack. Later on pupils make simple constructions derived from their play life in its imitation of adult activity. Some of these are wagons, furniture, wheel barrow, bank and bird house.

Three forty-minute periods weekly.

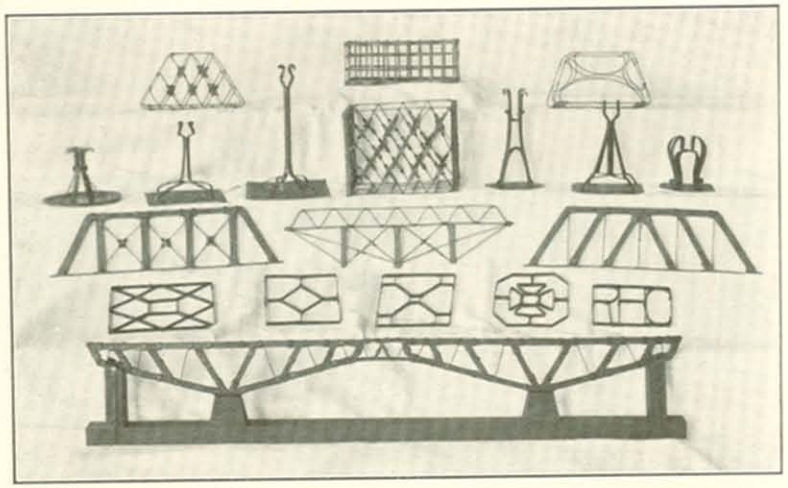


FIFTH GRADE.

Woodwork. Continuation of the fourth grade course, with the attention directed toward problems which require a consideration of the third dimension. This calls for greater manual dexterity in the handling of one-fourth, three-eighths, and one-half inch lumber. The following models are made: match box, tooth brush holder, bracket shelf, water wheel, post card box, picture frame, time recorder, cart, bow and arrow. As an application of the previous work the problems of kites are taken up. These problems bring out the

squaring of sticks in three dimensions, half-and-half knife joints, and constructive thinking which considers strength, balance, lack of weight, and aero-planes.

Bent Iron. The use of this material gives opportunity for a limited number of valuable experiences in art and constructive work which are not brought out in any of the other materials; the child is made acquainted with the properties and typical uses of iron as structural material, and operations are taken which bring in a new



muscular adjustment for the fingers. The models are: tea mat or grille form, envelope rack or mail basket, tray or fern dish or glass holder, candle stick, lamp shade or a lantern with bracket and chain, types of bridge or roof trusses.

Two sixty-minute periods weekly.

SIXTH GRADE.

Woodwork. In this grade the full course in bench work in wood begins. The rules for surfacing and squaring a piece of stock, names of common tools, and manner of using them are taught along with such fundamental processes as will apply in later work.

Models: Sawing exercise—involving squaring with try square and pencil, cross-cut sawing, guaging with marking guage, rip sawing, diagonal mitre sawing; the piece to be finished into a center part for ring toss or into solitaire board.

Bill file—introducing planing a long edge and boring a hole.

Bread board—method of squaring up stock.

Scouring board, or handkerchief box.

Coat hanger, or drawer handle.

Bracket shelf (original).

Teapot stand, or easel book rest (original).

Water wheel and optional model for application of power.

A project which is the pupil's free choice.

Two sixty-minute periods weekly.

SEVENTH GRADE.

Woodwork. In this grade there is required a more thorough study and application of principles gained in preceding work, more skill and greater appreciation of a high standard of work.

Models: Sand paper block or broom holder.

Book rack (original).

Blotting pad or sleeve board.

Foot stool, nail box, or blacking box.

Axe handle.

Medicine cabinet (original).

Towel rack or towel hook (original).

A project involving tension and compression members.

A project which is the pupil's free choice.

Special attention is given to the proper care of tools in regard to fine adjustments and keeping a working edge.

EIGHTH GRADE.

Woodwork. For the first half year the models are planned to continue the sequence of previous years with added difficulty. For the second half year larger original work is done.

Models: Inkstand or pen tray (original).

Knife and fork box, concealed mortise and tenon joint.

Clothes' rack, whisk broom holder, or towel roller.

Picture frame with lap joint, butt inter joint, or lap and mitre joint.

Sun dial or book stall (original).

Table or desk cabinet (original).

Step ladder.

A project which is the pupil's free choice.

Two sixty-minute periods weekly.

The work of the grammar grades is so arranged that the pupils who go no farther will have had a good physical and mental training, and a first hand acquaintance with some common materials and processes of industrial importance. The work of the high school which follows provides a more intensive training along rather more special lines.

HIGH SCHOOL COURSES IN MANUAL TRAINING.

FRESHMAN YEAR.

Joinery. Purpose: To instill a knowledge of the principles of joinery by teaching the use and care of woodworking tools. To develop skill in their use by means of progressive exercises involving the different tools and a series of the different joints used in joinery. The application of the joints are shown in the construction of finished products.

Exercises. Planing, squaring stock up to given demensions; use of saw, square, plane, knife, and guage.

Sawing; use of bevel and steel square.

Chiseling; use of plane, square, knife, saw, and chisel.

Inlaying blocks.

Mortising; use of mortising chisel and mortising guage.

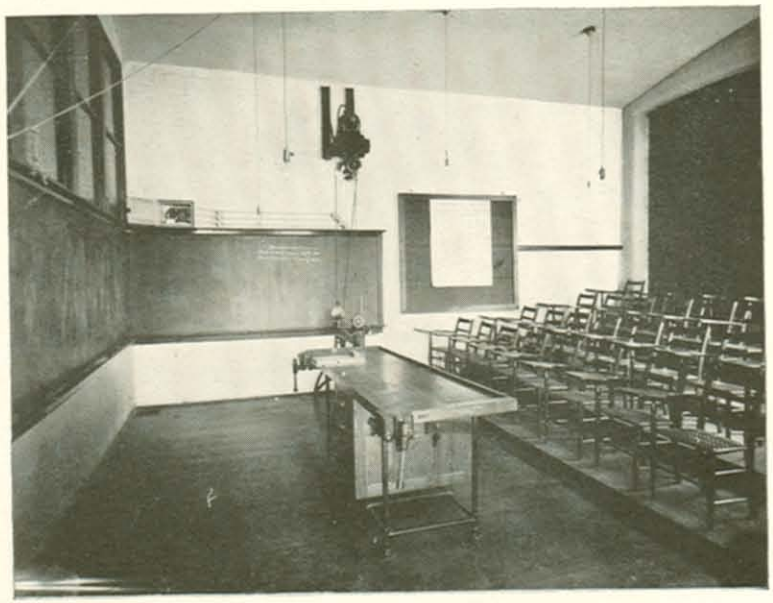
Mortise and tenon joint.

Splice.

Bridge, house frame, or roof truss bringing in the application of the splice and the mortise and tenon joint.

Open double mortise and tenon joint.

Dovetail joint.



Woodwork Demonstration.

Filing draw with application of dove tail joint.

Double mortise and tenon joint with pin.

Keyed mortise and tenon joint.

Piece of furniture with application of keyed mortise and tenon joint.

Mortise and tenon with relish.

Writing board with practice in gluing.

Box with panelled sides.

Drawing board; use of plow in tongue and groove joint.

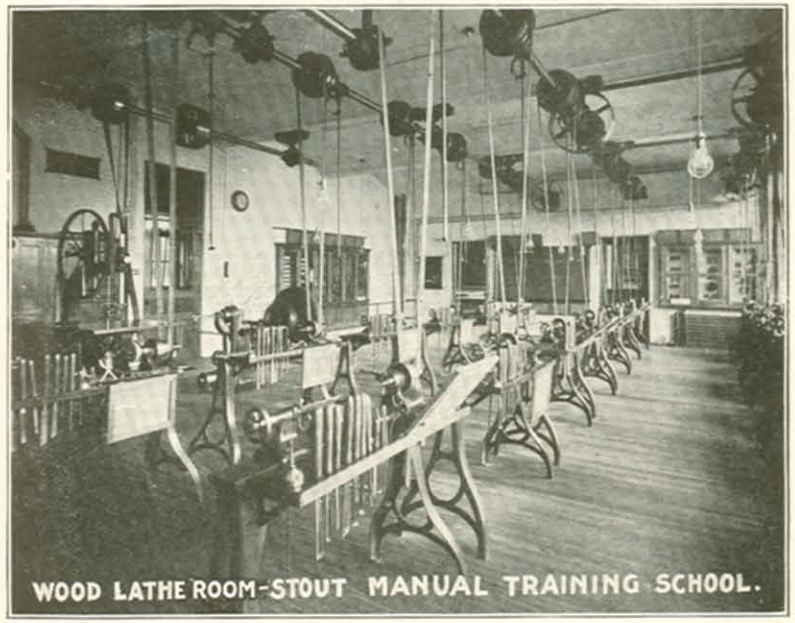
T-square.

45 deg. triangle. 30x60 deg. triangle.

Finish piece, illustrating filling, staining, varnishing and rubbing.

Handkerchief box with tongue joint, application of rubbed finish.

Joinery is given three ninety-minute periods each week during the year. Optional pieces are made by the fastest students.



WOOD LATHE ROOM-STOUT MANUAL TRAINING SCHOOL.

SOPHOMORE YEAR.

Wood Turning. Purpose. To familiarize pupil with wood turning tools and lathe operations, the requisite skill being acquired by means of exercises embodying the various methods. The course follows and is supplemental to that of joinery, the whole forming a foundation for the succeeding work in pattern making.

Exercises. Plain cylinder. Involving use of gouge in roughing and finishing; centering and preparing stock for lathe; sharpening tools; speed of lathe.

Use of turning or skew chisel.
Concave turning with gouge.
Convex and concave turning; practice with chisel and gouge.
Chisel handle; polishing in lathe.
Turning tool handle.
Mallet.
Gavel.
Egg or ball.
Rosette; face plate work.
Ring; making and use of chuck.
Plate; practice in chucking.
Goblet; inside turning.
Napkin ring; finishing on mandrel.
Box; inside turning and fitting.

Wood turning is given during the first twelve weeks of the second year, three ninety-minute periods each week.

Pattern Making and Molding. Purpose. To give pupils practical acquaintance with typical shop processes employed in pattern making. This is accomplished by making a series of patterns, from the simple solid pattern to the more complex parted and cored patterns, each exercise illustrating some new or special method practice in molding.

Exercises. Ribbed pattern. Illustrates draft and shrinkage. Molding entire mold made in nowel; care in packing flask; gate cutting and venting. Finishing of pattern.

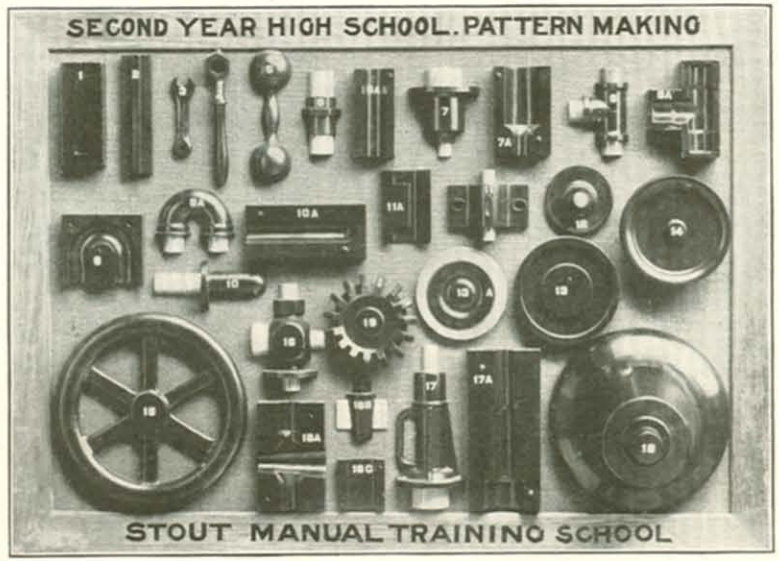
Shoe. Illustrate internal draft. In molding, same priciples as above are employed.

Plain wrench. Use of match in molding. Half of mold made on each flask.

Wrench. Same as above. Practice in molding with irregular parting surface.

Dumb-bell. Simple two-part pattern.
Coupling. Two-part pattern with plain core.
Core-box for No. 6.
Gland. Two-part pattern; irregular core.
Core-box for No. 7.
Pipe tee.
Core-box for No. 8.
Pipe return bend. Split pattern. Setting core with chaplets when molding.
Core-box for No. 9.
Cylinder. Split pattern. Balanced core.
Core-box for No. 10.

Pillow block. Special or "D" core print.
Core-box for No. 11.
Face plate. Illustrates allowing for finish. In molding, setting a vertical core.
Core-box for No. 12.



Grooved pulley. Solid pattern. Molding by means of a core.
Core-box for No. 13.
Grooved pulley. Split pattern. In molding, use of cheek or three-part mold.
Wheel. Built up pattern. Construction of wooden face plate.
Stop-cock. Illustrates more complicated coring.
Core-box for No. 16.
Valve stem for No. 16.
Core-box for No. 16.
Jack screw. Ribbed pattern. Use of fillets.
Core-box for No. 17.
Built up work.

Pattern making is given during the last twenty-four weeks of the second year in the High School, three ninety-minute periods each week.

JUNIOR YEAR.

Forging.

Purpose. To teach, by means of a progressive series of models, the fundamental principles of forging, each new model containing a new principle combined with some previously taught.

Exercises. Drawing out stock to a square cross-section of given dimensions.

Ring. Drawing stock of irregular dimensions to round cross-section and bending.

Drawing stock flat and bending.

Double Ring or Figure Eight. Same as Ex. 3.

Gate Hook. Drawing, tapering, bending and twisting. Fullering upon edge of anvil.

Angle. Forged from ½-inch stock, fullered and drawn to ¼-inch, leaving enough surplus metal in center to form a square corner.

Cross Bar for Trace Chain. Forged from ½-inch round iron. Upsetting, drawing to taper, bending and punching.

Model bringing in the use of the finishing tools, the fuller, the swage and the flatter. Principles involved: Upsetting, fullering, drawing and swaging.

Fork. New principle involved, splitting.

Practice in punching, splitting, bending at right angles. Finishing with flatter and swage.

Hook. Upsetting in heading tool. Fullering, drawing, upsetting, bending and drilling.

First exercise in scarf welding.

Flat Ring. Scarf weld.

Ring and Eye. Scarf and lap weld.

Bolts. Welded heads. Practice in screw cutting.

Hook and Chain. Practice in assembling.

Tongs. Principles involved: Fullering, drawing, punching, riveting and welding.

Lathe Tools. Round nose. First exercise in working steel.

Tempering.

Threading tool.

Cutting-off tool.

Boring tool.

Side tool.

Diamond point tool.

Fork. Additional practice in working steel.

Hardie.

Set Hammer. Use of punch and drift.

The Forging Course is given in the third year of the High School, three ninety-minute periods each week.

SENIOR YEAR.

Machine Shop Work.

Purpose. To teach some of the fundamental operations in bench and machine tool work. This is accomplished by the making of practice pieces, the construction of which involves the typical use of one or more tools, the order in which these are given being determined by educational principles.

Exercises: Shaper exercise. Material—rectangular block of cast iron.

Chipping, filing of one face, and scraping to fit surface plate.

Finishing other faces of block on shaper.

Chipping and filing two bevel edges.

Drilling three holes to be finished with ½-inch, ⅝-inch, and ¾-inch tap.

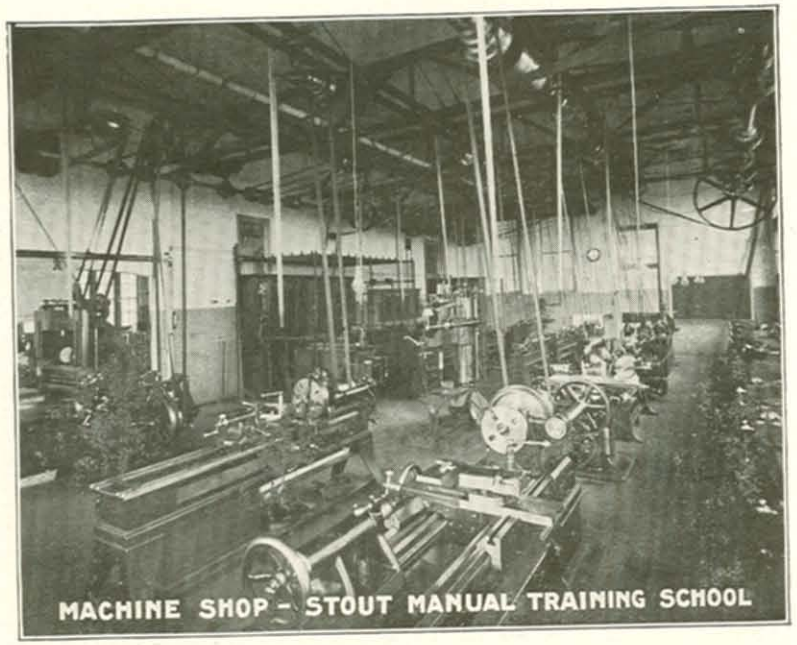
Drilling and chipping out stock to make rectangular hole.

Use of combination counterbore.

Turning plain cylinder. Material—hot rolled machine steel.

Use of center square and combination counter sink and center drill.

Facing two ends and finishing cylinder with straight shank Armstrong tool.



MACHINE SHOP - STOUT MANUAL TRAINING SCHOOL

Taper turning exercise. Material—cold rolled machine steel.
Use of Armstrong cutting off tool.
Setting over of tail center.
Turning No. 2 Morse taper.
Turning concave and convex curves and finishing on speed lathe.
Draw filing taper.
Thread cutting exercise. Material—cold rolled machine steel.
Use of thread cutting tool.
Chasing right and left hand threads.
Bolts and nuts. Material—drop forged steel.
Finishing head and nut to standard dimensions.
Tapping nut.
Finishing head and nut on milling machine.
Fitting exercise. Material—cast iron and cold rolled machine steel.
Chucking work.
Use of boring tool and finishing with reamer.
Use of mandrel.
Polishing on speed lathe. Cutting inside and outside threads in cast iron.
Turning shafts for running, drive, shrink, and key fit.
Cutting key way in shaft on milling machine.

Cutting key way using shaper.
Jack screw. Material—body and step cast iron, screw cold rolled machine steel, lever, ⅝-inch octagon tool steel.
Mounting body on face plate.
Cutting inside square threads.
Cutting square threads on screw.
Drilling holes for lever.
Finishing lever.
Turning taper with compound rest.
Lathe center. Material—tool steel.
Turning taper by using taper attachment of lathe.
Tempering and grinding with center grinding machine.
Stand of gears. Material—gears and stand cast iron; studs machine steel.
Use of index head on milling machine.
Laying out and drilling holes an exact distance apart.
Making running and drive fits.
Use of planer. Material—cast iron.
Square and angular planing.

MECHANICAL DRAWING ROOM IN STOUT MANUAL TRAINING SCHOOL

MECHANICAL DRAWING.

The course begins in the seventh grade and continues through the second year in the high school. The aim is to familiarize the pupils with mechanical drawing tools, to acquaint them with those geometrical and mechanical matters which can be best learned through mechanical drawing, to give a knowledge of projection, and the making of working drawings, to develop habits of accuracy and neatness along mechanical lines.

SEVENTH GRADE DRAWINGS.

Exercise sheet of squares and hexagons.
Panel design in straight lines.
Working drawing of broom holder.
Isometric of cube.
Working drawing of simple woodwork joint.
Isometric of woodwork joint.
Working drawing of book stall.
Cabinet projection drawing of book stall.
Floor plan of cottage (partly original).
Elevation and roof plan of cottage.
Optional drawing.
Facade of public building (main lines in outline from photograph).
Sheet of lettering.
Optional drawings.

EIGHTH GRADE DRAWINGS.

Sheet of lettering.
Special lettering.
Regular polygons.
Involute of triangle.
Involutes of square and octagon.
Involute of circle.
Evolute of given curve.
Development of rectangular prism.
Development of truncated prism and pyramid.
Development of cylinder.
Working drawing of sun dial.
Working drawing of desk cabinet.
Optional drawings.
Diagram of relative strengths and weights of materials.
Diagram of lever conditions.
Diagram of stresses on loaded beams.

FIRST YEAR HIGH SCHOOL DRAWINGS.

Line divisions.
Angle divisions.
Perpendiculars and parallels.
Tangent lines and arcs.
Tangent arcs.
Ellipses.
Geometrical constructions.
Projection of framed prism.
Projection of truncated pyramid.
Projection and development of truncated hexagonal prism.
Projection of solids turned at double angles.
Projection of conic sections—ellipse, hyperbola, parabola.
Development of intersection of hexagonal and square pyramid.
Development of intersection of cylinder and cone.
Optional drawings.
Projection of shadow of prism.
Projection of shadow of pyramid upon steps.
Sheet of Lettering.

SECOND YEAR HIGH SCHOOL DRAWINGS.

Projection of framed rectangular prism at double angles.
Projection of framed hexagonal pyramid at double angles.
Projection of irregular curves—lines from boat model.
Location of points upon irregular solid.
Perspective of framed prism at angles to picture plane.
Perspective of framed prism parallel to picture plane.
Projection of perspective scheme.
Perspective of irregular curves.
Perspective of chairs and table at different angles.
Perspective of cast shadows.
Floor plan of bungalow.
Elevations of bungalow.
Development of interior wall schemes.
Development of helix.
Screw threads.
Square and hexagonal bolts.
Optional drawings, cams and cranks.

OPPORTUNITY TO SPECIALIZE.

Beginning with the school year 1906-1907, courses will be offered to the boys of the junior and senior classes along special elective lines. Mechanical drawing during this time may take the direction of architectural or machine drafting as a special preparation for occupations calling for the work.

Courses in Domestic Science.

FOR THE GRADES IN MENOMONIE SCHOOLS

Purpose. The purpose is two-fold. It has to do, first, with the development of the individual and, second, through this, with the development of the home.

The general purpose is to present such fundamental principles and their application in systematic exercises and operations as shall give to the pupil habits of attention and exactness, the power of logical thought, a high ideal of the dignity of labor, and the ability to use her powers definitely and intelligently in the production of her ideal of perfection. At the same time there shall come to her, knowledge and experience that will be of direct use and effectiveness in her life and in her home.

To this end, the course includes a definite amount of study and systematic application that must precede the working out of individual ideas and inventions, though opportunity is given in the application of known principles and operations for originality and self-expression. Underlying the whole course, popularly called domestic science, which includes domestic art, domestic economy and domestic science proper, is the purpose to teach the pupil to think clearly, logically and purposefully about whatever the operation in hand may be, and to carry into her own home the classified knowledge, experience, and effectiveness resulting from the work in this course.

FOURTH GRADE.

Sewing.

Practice Stitches on Canvas: Running, basting, waist-seaming, over-seaming, over-casting, catch-stitching, cross-stitching.

Invention: Application of stitches to some article of use, design by pupil.

Cotton Chart: Notes in cotton, growth, culture, etc.

Hems and Hemming: Practice hems; paper—1 in.—½ in.—¼ in.; paper—square and mitred corners; cloth—½ in. hem, square, and mitred corners applied to muslin square.

Application of Hems: Small doiley designed by pupil, outlined in running stitch; small pillow-case—scale, ¼ in.— 1 in.

Practice Band: Small ruffle on band.

Application of Band: Small gingham kitchen apron—scale ¼ in. —1 in.

Invention: Small quilt, handkerchief, etc.

Apron for Pupil: Material provided and work done by the pupil.

Notes on Cloth: Kinds, manufacture, etc.

Sewing in the Fourth Grade is given in the regular school room under the direction of the grade teacher, two thirty-minute periods each week.

FIFTH GRADE.

Sewing.

Practice Darns: Design of plain weaving, weaving with yarn to learn stitch; design of square darn on paper, square darn in stockinet; design of pointed darn on paper; pointed darn in stockinet.

Application of Darns: Darning of stockings; designing of doiley, working of doiley with a combination of outline and darning stitch.

Doll's Outfit—scale ¼ in.—1 in. Drafting of pattern of skirts, drawers, chemise; making of garments from muslin; making of dress and hat.

Application of preceding principles. Simple dress for small girl, fitted usually to self.

Practice Darning in Cloth: Design, darning on cloth of the following darns—straightway, bias, straightway bias, corner, patch.

Application of Darning: Darns put upon garments.

Compositions on uses, cost and manufacture of materials used.

SIXTH GRADE.

Sewing.

Practice Patching: Hemmed patches in gingham and calico; over-seamed patches in gingham and linen; circular patches on striped materials and in linen.

Application of Patches; Towels, table-linen, garments.

Practice Stitches and Patches on Flannel: Fancy stitches, scallops, eyelets, seams, bindings.

Application of Flannel Work: Small flannel skirt.

Practice Seams: Overcast, felled, French bound.

Practice Plackets: Hemmed, bound, bias, faced, gussets.

Compositions on gingham, flax, and wool in connection with materials used.

SEVENTH GRADE.

Sewing.

Drafting of patterns for underclothes.

Application of preceding work in the cutting, fitting, trimming and making of a skirt, pair of drawers, corset cover or chemise and gown.

Sewing in the Fifth, Sixth, and Seventh Grades is given in the sewing-room of the Manual Training Building, two sixty-minute periods each week.

EIGHTH GRADE.

Food.

Study and Recitation-Room Work. The Human Body: General structure and physiology of the lungs, digestive organs, and organs

of excretion; special study of digestion, absorption, metabolism and assimilation.

The Essentials of Good Health; Good food, pure air, pure water, personal cleanliness, and intelligent care of the body.

Foods: Definitions; physical and chemical properties; classification according to composition into proteids, carbo-hydrates, fats, mineral matters; discussion of each class including composition, digestion, use in the body, illustrations, and source of supply; the manner of growth, method of manufacture, and market value of common food stuffs under each class.

Air: Composition, physiological uses, oxidation in the body; Combustion—definition, essentials, fuels, products.

Water: Sources, kinds; chemical and physical properties; effects of heat and cold; physiological uses; use as cleansing agent.

Field of study preparatory to kitchen laboratory work: General care of the kitchen furnishings—tables, sinks, refrigerators, pantry, range, including the essentials of a good fire, laying of fire, management of drafts, and dampers; care of utensils; washing of dishes, towels, etc.; study of tables of weights and measures and abbreviations.

Kitchen Laboratory Food Work. Experiments: Proteids—the effects of various degrees of heat upon various proteids; carbo-hydrates, division into starches and sugars; structure of each, effects of various degrees of heat upon each; fats—structure, effects of heat, etc.; deduction of principle of cooking of each food class.

Preparation of foods: Proteids—cooking of eggs; carbo-hydrates—rice, sago, etc.; fats, chocolate; combinations of food classes—cereals, hot breads, light breads, simple cake mixtures, cookies, soups of various kinds, spring vegetables.

Food work in the Eighth Grade is given two sixty-minute periods each week during the year.

HIGH SCHOOL COURSES IN DOMESTIC SCIENCE.

FRESHMAN YEAR.

Food Study and Recitation-Room Work. General review of Eighth Grade work, with further elaboration of food classification and continued study of food stuffs with reference to food materials contained. classifications and preparation for the market.

Particular study of proteids: Meats—Composition, food value, use in body, source, kinds—division into beef, pork, mutton, poultry, game; market appearance; cuts; cost; methods of cooking; methods of re-cooking each division; fish—composition, market appearance, preparations for use; methods of cooking, method of re-cooking; milk—composition, food value, use, adulterations, sterilization and preservation; products of milk—cream, butter, cheese; eggs—composition, food value, use, preservation, tests for freshness, methods of cooking; gelatine—composition, food value, use, how obtained, kinds, market appearance; method of using; principles of preparation.

Study of markets: Visits to various markets; study of cuts of meats; cost of materials; practical marketing; visits to mills and shops; buying of materials used by classes.

Study of food preparation and combinations: Necessity for varied diet; reasons for cooking foods; planning of menus with reference to food value; estimation of cost of menus; comparison of economic food value of various foods.

Field of study preparatory to work in kitchen laboratory: Continuation of work commenced in first year; care of the dining room and its furnishings.

Kitchen Laboratory Food Work. Experiments: Effects of heat and cold, hot and cold water, acids and salt upon proteid foods studied; further experiments upon carbo-hydrates and upon yeasts.

Preparation of foods: Proteids—Cooking meats and fish of all kinds in various ways; preparation of milk to be used as a food, including its combination with vegetables, eggs, junket, etc.; cooking of eggs in various ways; preparation of gelatine; carbo-hydrates—flour mixture of all kinds; fats—preparation of various foods by frying; combinations of food classes—breads, beverages, simple puddings, cakes, fall vegetables.

Assistance rendered other classes in the preparation and serving of meals.

Two ninety-minute periods weekly.

SOPHOMORE YEAR.

Millinery.

Fall Millinery. Bows—the making of different kinds—wiring, etc.
Renovating of ribbons—velvets and silks.
Renovating and changing of felt hats.
Bandeaux—making and covering.
Folds—practice in making different kinds.
Frames—designing and making buckrum frames.
Covering of frames with cloth—silk or velvet.
Trimming of felt and frame hats.
Lining of hats.

Spring Millinery. Frames—designing and making wire frames.
Making and trimming of straw—embroidery and lace hats.

Needle Work.

Sofa pillows—couching (design made in art class).
Drawn work—collar and cuffs—doilies, etc.

Embroidered hats—designed and worked (hats made in millinery class).

Embroidered waists (waists made in dressmaking class).

Millinery is given twice a week in ninety-minute periods during the spring and fall of the Sophomore year.—Needlework during the winter.

JUNIOR YEAR.

Dressmaking.

Underskirt Measurements taken and pattern for skirt drafted; skirt made of any suitable material.

Shirt waist. Measurements taken for shirt waist; pattern drafted; cotton shirt waist made.

Summer dress. Made of dimity, muslin or other thin material; shirt waist pattern and skirt pattern drafted and used.

Woolen or cotton shirt waist suit. Shirt waist pattern used; drafted skirt pattern used. Suit cut, fitted, trimmed, and finished.

Textiles. The study in textiles is confined to a study of the methods of manufacture of the various fibres, the selection of materials according to wearing qualities and suitability, the comparison of cost of various materials and the assembling of fabrics into garments.

The wardrobe. The assembling of garments to form a suitable wardrobe is studied with reference to appropriateness, durability, cost and usefulness. Renovation and care of the wardrobe are taught in connection with dressmaking.

Three ninety-minute periods weekly.

SENIOR YEAR.

Food Study and Recitation-Room Work.

Study of Dietaries: Balanced rations and practical menus for use in the home.

Serving of Food: Table furnishings—including linen, silver, crystail and china; laying of table; serving of breakfast, dinner, lunch and supper; duties of host, hostess and waiter; care of table furnishings.

Study of markets: Continuation of work commenced in previous year with, in addition, the marketing for all meals served by the class; the keeping of expense accounts, and the computation of exact cost per meal per person and the total cost for one day.

Study of food materials: Fruits—use as food, value as food, use of raw fruits, use of preserved fruits; methods of preservation—drying, canning, preserving, pickling—the use of each and principles and methods involved; care of fresh and preserved fruits; salads—classes, dressings, treatment of each class, study of materials used, garnishing and serving; pastry—composition, value as food, kinds, methods of preparation; puddings—food value, palatability, usefulness, kinds,

materials used, methods of preparation; cakes—composition, value as food, kinds, material used, methods of preparation, including combination of materials; ices and ice-cream—division into classes, sherbets, ices, creams, etc.; food value, materials used, methods of preparation, freezing and serving of each.

Preservation and adulteration of food materials: Preservation by means of elevation and reduction of temperature, exclusion of air, compression, drying, extraction, use of antiseptic substances, use of acids and gases, use of special preservatives; adulterations not injurious to health; use of inferior goods; increase of bulk by use of cheaper food materials; adulterations injurious to health, including use of colors, chemical preservatives, materials having no food value; effects of food preservatives and adulteration; remedy—knowledge of food materials.

Field of study preparatory to Invalid Cookery: Study of conditions existing in common diseases; physiological effect of various food materials; hygiene and care of the sick room; the arrangement of dietaries suitable to different conditions; serving of foods.

Kitchen Laboratory and Practical Food Work. Preparation of foods: Fruits—canning, preserving, pickling, and jelly making; salads—preparation of fruit, vegetables and meat salads; oil and egg dressings; pastry—pies and puff paste; puddings—creams, baked, boiled,

KITCHEN IN STOUT MANUAL TRAINING SCHOOL.

steamed, and custard with various sauces; cakes—loaf and layer, with various fillings; frozen desserts—ices, sherbets, ice cream of various kinds; combination of foods in the preparation of meals.

Invalid cooking: Gruels, meats, ices, drinks, broths; preparation of the invalid tray.

Preparation and serving of meals: Marketing for, preparing and serving three meals by each group of girls. A purse of $2.50 is allowed, and from this provision must be made for six invited guests. The members of the class act as host, hostess, and waiters. Meals are served in the school dining room.

Three ninety-minute periods weekly during the first semester.

SENIOR YEAR.

Household Management.

Location of house: Essentials—sunlight, free circulation of air, dryness; discussion of elevation of site, soil, location with regard to contamination.

Selection of house: Country house—character of soil, water supply, source of contamination; city house—condition of pavements, gutters, soil and drains.

Building of house: Materials available; conformity to use; convenient arrangement of rooms; sanitary arrangement of cellar, water supply, drainage, ventilation, lighting, heating.

Drainage and plumbing: Canons of good house drainage—application in selection or building of house; qualities of a good system—location of fixtures, arrangement, use and care of various pipes and fixtures.

Water supply: Necessity for absolute purity; city supply; individual supply including advantages and disadvantages of various kinds of wells and cisterns, their use and care; filtration and practical tests of condition of water.

Ventilation: Necessity for pure air; objects of ventilation; real ventilators; makeshift ventilators; ventilation of various rooms and parts of the house.

Heating: Objects; methods, including a discussion of use of hot air, steam and hot water; stoves and grates; average temperature of various rooms.

Lighting: Objects; necessity for supply of air; methods, including use of kerosene, gas, electricity; care of lighting apparatus; comparison of value of various methods.

Furnishing: Fundamental principles of good furnishing; effect of furnishing upon health, comfort, and development of family; consideration of floors, walls, windows with reference to use; finish—materials used, choice of color, designs, etc.

Furnishing and care of different rooms of house: Kitchen—Furniture, floor, walls, windows, sink, cabinets, tables, cupboards, lights, pantry; special furniture that contributes to comfort, such as high stools, bins, boxes, jars, etc.; care of all furniture including daily and weekly cleaning, and annual cleaning and renovating of walls, and floors; dining-room—floors, windows, furniture, including table furnishings; care, weekly sweeping, dusting, crumbing after meals, lighting, heating and airing; sleeping rooms—floors, windows, walls, closet, furniture, including furnishings of bed; care, weekly cleaning, removal of soiled clothes, making of beds, removal of slops, dusting, airing, heating and lighting; bath-room—floors, walls, windows, cupboard, fixtures (simple, easily kept clean, in sight); care, airing and ventilation, thorough cleaning and flusing, use of disinfectants and deodorants.

Planning of house of moderate size, using principles worked out previously; furnishing of the same, with selection of color schemes and furniture adapted to use of house.

Household management is given five times a week in forty-five-minute periods during the second semester of the Senior year of the High School.

Five forty-five-minute periods weekly during the second semester.

Summary of Courses in Drawing and Color Work.

The work in drawing and color is begun in the first year and carried through the eight grades of the public school and two years of the High School. After completing the two years required in the High School, pupils of marked ability, who are desirous of doing so are allowed to continue the work along special lines.

Free hand drawing from still life, life, nature, memory and imagination, is begun in first year and continued through the entire school course.

Design is begun in first year by making simple borders, surface patterns, etc., of colored sticks, paper tablets, natural leaves, flowers, etc., and is continued throughout the school course. The work is so arranged that the necessary qualities of good design, strength, simplicity, beauty and truth, and the underlying principles of the anatomy of pattern, order, proportion, repetition, radiation, symmetry, balance, etc., are of gradual and systematic growth.

Applied design. The work in applied design includes general ornament, all kinds of surface patterns, borders, designs for tiles, pressed brick, metal work, hardwood floors, book-covers, prints, wall papers, rugs, oil cloth, stained glass, china, interior decoration, etc., and in the case of boys, designs for articles to be made and decorated in the manual training.

Composition. The work in design is supplemented by training in the principles of composition as applied in straight and curved line designs, landscapes, etc., through the entire course.

Historic Ornament. The historic styles are studied and the distinguishing features of each are applied in original designs. This work begins in the fourth year with the study of Egyptian art, and is followed by Greek and Roman in the fifth year, Byzantine in the sixth year, Saracenic in the seventh year, Gothic in the eighth year, Renaissance and modern art in High School.

Nature work. Begins in first year and forms a large and important part of each year's work, each season furnishing material for both drawing and color.

Flower Drawing. Begins in the first year and is carried on systematically from window gardens, wild flowers, etc. In the fourth year conventionalization is taken up, and later the use of conventional forms in original designs.

Perspective. Free hand perspective is taught from the beginning

of the work by a careful training in drawing the true appearance of simple models, and continues throughout the course. In the seventh and eighth years the laws of perspective, and the terms, are given—these being made as simple and as few as consistent with a clear understanding of the subject.

Cast Drawing from the antique is begun in the High School and continued through the course.

Materials. Charcoal, colored crayons, pencils and Japanese brushes are used in the first year and throughout the course. Water colors are used from third year on through course. Pen and ink work is introduced in fourth year. Designers' colors are used in High School for wall papers, etc.

DRAWING ROOM IN ART DEP'T. STOUT MANUAL TRAINING SCHOOL.

The Stout Training Schools Bulletin.

The Bulletin is published four times a year. The next number will be issued in August, and will be ready for distribution at the opening of the next school year.

A new experiment in industrial education is to be tried next year in the Menomonie High School. Boys beginning the third year of the high school course will be allowed to substitute for the regular manual training work in the course, work in some particular trade to be carried on during the third and fourth years. The next number of the Bulletin will give the reasons for trying this experiment and details of the plan. A number of questions given in the first number of the Bulletin will be answered in the next issue.

It will be the aim of the Faculties of the Training Schools to make the Bulletin a publication of practical use to those interested in Manual Training and Domestic Science as subjects in the public school course.

Subscription price, 50 cents per year.

STOUT TRAINING SCHOOLS,
Menomonie, Wisconsin.